SEPTEMBER, 1929

COTTON

THE TEXTILE MANUFACTURING JOURNAL

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Number 11.
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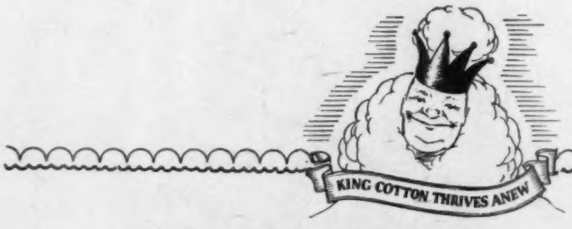

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September, 1929

W. R. C. SMITH, Publisher
T. W. McALLISTER, Editorial Director ROBERT W. PHILIP, Editor

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Man's visual outlook has always been measured in three dimensions, but until recent years the third dimension was limited to a matter of feet while length and breadth were reckoned in miles.

Time and progress brought the new altitudes and lo! the third dimension now is measured by thousands of feet and the other two by hundreds of miles.

The industrial horizon likewise has been widened. Business is no longer local, nor even national. Manufacturing to be successful is no longer a matter of trading lucre for labor but rather of buying and paying for production and sales.

New problems have arisen, new competition, new tools for business — and with them the need for new perspectives that will give clear vision to those who sit in the pilot's seat.

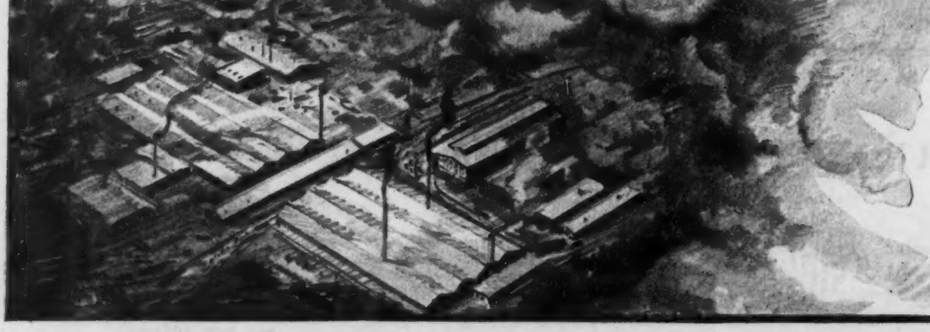
It has been our lot to have a part in some of the developments in industry during the past thirty years. Within a very few months some notable trends have been maturing — trends of importance for the more profitable conduct of business in many fields of manufacture, but at the moment of particular interest to the Textile Industry.

We shall be glad to extend this discussion with responsible executives.

J. E. SIRRINE & COMPANY

Engineers

Greenville South Carolina



ENGINEERING
CONSULTANTS
ON THE SOUTH

COTTON

Vol. 93 September, 1929 No. 11

BUILDING and STARTING UP

A New Cotton Mill

MANY readers who have never gone through the experience of "starting up" a mill will be interested in this man's story of his own case. He recently placed a brand new mill in operation.

And those readers who have "started one up," will want to read of this fellow's experiences.—The Editor.

IN starting a new mill there are three important considerations to be taken up and threshed out. They are *finances, material property* and *organization or personnel.* Of these three it may be said that neither one supersedes the other. For in these days of stringent competition in the cotton mill, each must function to the highest level of efficiency in order to make the mill a success.

The remarks set down here are from recent experiences in the past few years, and are not problems of years gone by. They were thrashed out in such conditions as the textile industry now labors under.

In financing a new mill, a number of things may be done. All necessary money may be raised by selling common stock only to the extent of finances needed. Or preferred and common stock may be sold, which is the preference of some mills I have known, wherein the preferred stock is callable, thus lowering the capitalization and increasing the dividends on common stock later on. Also some mills float a bonded indebtedness with the idea of paying off the hands through amortization, again lowering the capital account of the mill.

In the instance that the writer's experience covers, about 90 per cent of the cost of the land, buildings and machinery was sold as common stock, and the other 10 per cent and working capital was borrowed from banks. The advantage of this plan is that the capital may be later reduced as notes are paid off. Also, it makes for flexibility, in that notes at banks are usually as flexible as currency, and may be paid at will or ability, lowering interest charges or increasing them only as the demand for capital varies in the needs of the business. Whereas, if the mill is financed through bonds, preferred stock or ample common stock, these items are always crying for interest and dividends, and notes paid off at banks are not.

Some economists state that more businesses fail for lack of capital than from any other source. Whether this is true or not may be argued, but also it is true that a business in a strain will operate more efficiently than when finances are more than ample. So it is much better for a mill to be slightly under capitalized than to be over capitalized. Under capitalization may be remedied through earnings paying off indebtedness, whereas there is a tendency to extravagance when over capitalized. The reason for the Scotch being a thrifty race is through force of necessity, and this same force of necessity may be the making of some mills today in that they learn thrift and efficiency, not because they want to, but because they have to. In the long run, careful financing and watching every dollar means a habit which is not so easily shaken off, and makes for earning in prosperity and saves losses in depressions.

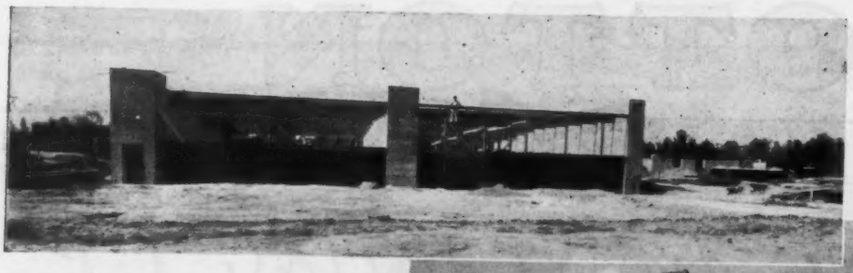
To sum up the financial side, I would say if a mill were an independent unit that capital should be raised only necessary to pay for the bare physical properties and so put the mill in a position where it must "swim out." A president, treasurer or manager who is faced with necessity will find ways to trim corners that already may seem rather rounded off.

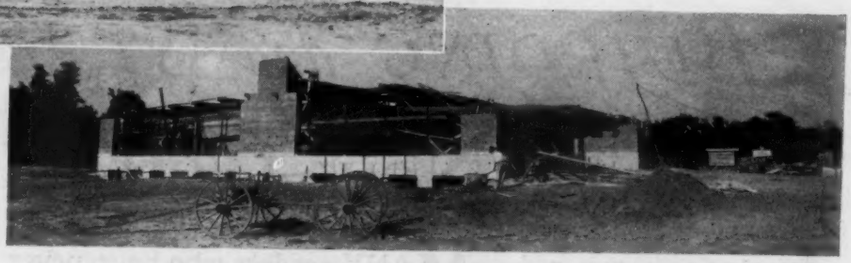
Material Prosperity.

NEEDLESS to say, the first thing we need is the services of a mill engineer. To him should be given the authority of mill buildings at all times, consulting with the manager or superintendent who is later to run the mill.

Mill engineers today still fall very short on many practical problems in the designing of the mill that later costs the mill many dollars. Suggestions of the superintendent should always be heeded, or given consideration, for he is the man who must live with the job year after year.

I would say, however, that when the mill building is completed the engineers can be dispensed with and the manager or superintendent can finish the job of installation of machinery from plans furnished by the mill engineer. The fact is that with both mill engineer and superintendent on the job it often brings about friction, or lack of control. The superintendent is better able to supervise the installation of machinery, and he gains familiarity with it that helps later





Two views of the earlier construction period during the erection of a southern weaving mill.

in its operation.

We run into lots of argument when it comes to the matter of machinery as to whether new or used machinery is most profitable.

From the writer's experience, just passed, I find that, roughly speaking, only one-third of the cost of the mill is represented by the actual machinery used in the manufacture of the cloth. The foregoing holds for *brand-new* machinery from the builders. The other two-thirds of the costs goes into such matters as land, buildings, warehouses, sprinkler equipment, heating equipment, side tracks, office buildings, office equipment, humidifying equipment, shop equipment, village tenements, water lines, electric equipment, etc.

So we see that the actual machinery which is so vital represents only one-third of the cost of the plant. Say one-half the cost of the machinery is saved by using used machinery, then, to be exact, we have saved only one-sixth in the cost of our mill. The cost of supplies, the cost of reconditioning, the cost of lower efficiency, will soon eat up this one-sixth that has been saved, and then, from that time on, it is a losing race.

Is it not just as practical to go out and buy a new body and frame for an automobile and put a second-hand engine in it and expect to go up the hill as fast as a car with a new engine in it? After all, it is the machinery in the mill that makes the cloth, not the buildings and land. And since this is only one-third the entire cost, it should be of the very best that can possibly be obtained, with the very latest improvements.

To give an example of what new equipment will do in spinning alone, the writer ran a mill which was about twenty years old, and in excellent physical condition, yet the new machinery of spinning alone in his present mill is doing 10 to 15 per cent better per spindle than was done on the older machinery.

The cost per pound, including everything, is around 20 per cent cheaper than in the old mill making the same fabrics while still maintaining the same average pay per individual operative as in the old mill.

If new machinery, or even second-hand machinery, is decided on, it is better to select just one make, from opening to weaving, as far as possible. There are a number of savings by so doing.

First, all the supplies can be purchased and shipped from the same source, saving time, freight and other expense.

Second, the machinery company furnishing all machinery will give better service and attention than if the different processes came from different manufacturers located at different points.

Third, there is a saving in freight shipments, as car-load lots come cheaper than less-than-carload lots.

Fourth, there is a saving in erection expense, for a few men from one company can erect, with local help, what a number of crews can, from a number of manufacturers.

Electric equipment for individual drives should be as good as can be obtained. Motors with ball or roller bearings are preferable. We have several hundred motors with roller bearings, and have never had one to give even the slightest trouble in their running of over a year, day and night steady run.

The roller or ball-bearing motor saves considerably in power and lubrication. The roller or ball-bearing motor has only to be greased every few months, against a weekly oiling of plain bearing motors.

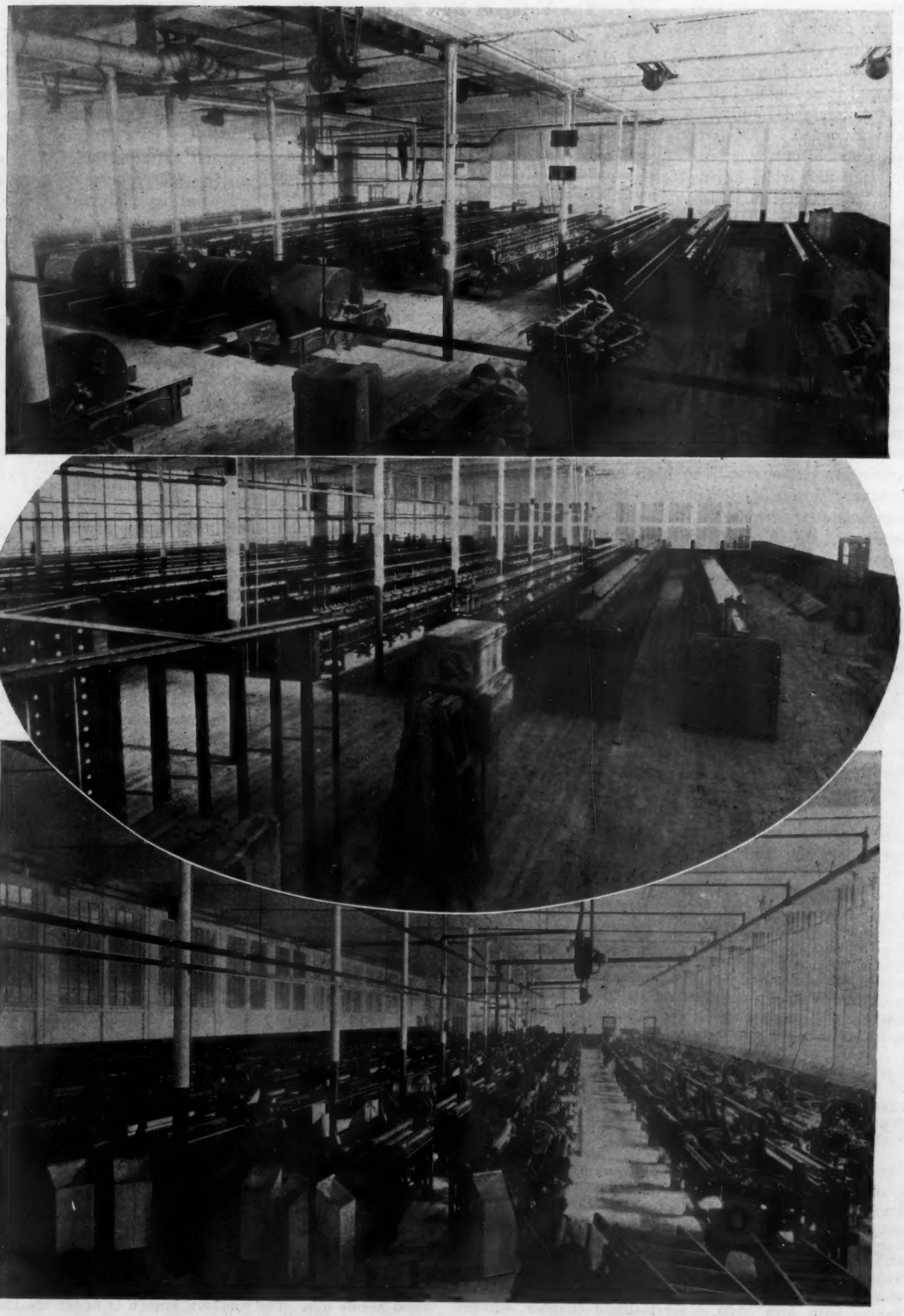
We have found that the return of all condensation to the boiler aids materially in reducing fuel costs for slashing, and the heating of the mill. Also the entire insulation of the mill roof aids in cutting down fuel expenses.

Organization of Personnel.

IF a mill has been built in a section where there are many mills, and skilled help is easily obtained, then the question of operatives is not such a task, because they may readily develop into a well rounded organization, after the elimination of the trifling and inefficient workers. However, in the writer's experience there was a mill built in a section where very few mills exist, and trained help was quite out of the question.

When the mill was in process of building, applications for work were taken from "green" help in the surrounding territory. Needless to say, there were many applications, as there always are in starting a new mill. Notes were placed beside the name of each applicant, showing the superintendent's judgment of the applicant. These were kept in a file for future reference.

About the time the machinery began to arrive, the most favorable applicants were notified to move to the mill village. These people were used in the rough work of erection of machinery under the supervision of the machinery erectors. This familiarized the "green" help with the general construction of the machinery and at the same time gave the overseer, who



DURING THE INSTALLATION OF MACHINERY.
Top, Card Room; Center, Spinning Room; Bottom, Weave Room.

helped the erectors, an idea of the people he was later to train.

In picking families for the mill it is usually better to get a mixed family, as they are called. That is to say, I should prefer a family, man and wife, having both boys and girls. Also, it is better to distribute the help in one family through several departments, for should they choose to leave suddenly then one department will not be crippled by the departure of this help.

It has been my experience that young help is far easier trained than help having reached middle age and on. It is much better to have green help from 16 to 25 years to train than from 25 to 45 years of age. The only draw back to the younger people is that they are less settled and more given to roaming, but they are far more adaptable.

We started our mill on high grade print cloths, with very few trained helpers, as might be said, only a nucleus of trained help. I should say we trained 75 per cent of the help ourselves. Of the 75 per cent, the majority had never been inside of a cotton mill before, and it is surprising how fast an organization can be trained even with the difficulty of breaking in new machinery. I would say in nine months from the day the first cotton was put in, or six months from the time that all machinery was started, a well organized personnel existed, with the mill operating at top-notch efficiency.

Of the trained help we obtained, we only hired such operators as card grinders, fixers for card room and spinning room, and loom fixers and overseers and a few weavers. Those trained from "green" help included picker hands, frame hands, card hands, spinners, doffers, slasher men, tying-in man, weavers, cloth room help and the machine shop force.

"The Value of New Equipment."

" * * * roughly speaking, only one-third of the cost of the mill is represented by the actual machinery used in the manufacture of cloth. This holds for brand new machinery from the builders * * * Say one-half the cost of the machinery is saved by using used machinery, then, to be exact, we have saved only one-sixth in the cost of our mill. The cost of supplies, the cost of reconditioning, the cost of lower efficiency, will soon eat up this one-sixth, and then from that time on, it is a losing race."

By following this policy of training our own help we have had very little labor turnover. If more mills would follow this policy of training home talent there would be plenty of labor and satisfied labor. It is the floaters who are always painting pictures of how good a job somewhere else is, and how much they pay at such-and-such a place. Yet, they give no reason for they, themselves, having left these greener pastures.

It is better to train help on a piece work basis than on a day basis, and is less expensive also. And too, it is more encouraging to the beginner. If a learner knows he is being paid for what he is actually doing, and not being paid just to learn, he will take hold faster and learn faster, for he knows that the quicker he learns the quicker his pay will increase. This is the plan we followed in training up an organization, and I believe it helped a lot.

It will be found sometimes that a person who is totally unfit as a spinner will develop into a good weaver. A man might not do as a picker man and yet would make an excellent slasher man. These things must be worked out according to the judgment of the superintendent and overseer. It is a rare gift to be able to place the right man in the right place, and is the genesis of organization. Andrew Carnegie once said that he attributed his success to surrounding himself with men more clever than himself. In this, he meant that each man knew his particular job so well that he knew more about it than did Mr. Carnegie himself. If the superintendent will surround himself with men more clever than he is, in their line, and in turn, the overseer will do the same, then there will be an organization that will make things "shout."

Ridley Watts Retires.

Ridley Watts, head of the wholesale cotton goods firm bearing his name, and one of the most prominent figures in the textile world, will retire from active business on August 1. Mr. Watts began his business career in 1890 as an office boy for the firm of Grinnell Willis & Co., and was instrumental in developing the business to one of great prominence in the textile field.

A new partnership has been formed to carry on the business. It will be composed of Arthur R. Johnson, Donald B. Stewart, George K. Dow and Ridley Watts, Jr. The changes will in no way affect the relationship of Ridley Watts & Co., with the trade or its connections, which includes some of the largest mills in the country.

Half or Union Wool Dyestuffs.

Sample Card No. 721 of the Society of Chemical Industry in Basle illustrates 42 half-wool Dyestuffs and 16 Polytex Dyestuffs. The half-wool Dyestuffs, which are distributed by the Ciba Co., Inc., are colored in the shortest possible bath with 10-30 gr. crystallized Glauber salt per litre (boiling.) The Polytex-Dyestuffs serve to color mixed weaves of cotton, wool and silk. They are dyed from a boiling bath with 10-30 gr. crystallized Glauber salt per litre and are permitted, if necessary, to draw on cotton and silk with shut off steam.

Southern Plant of Quaker City.

The Quaker City Chemical Co., Division of the O. F. Zurn Company, Philadelphia, have completed a southern branch factory and warehouse in Knoxville, Tenn., a view of which is shown above. The company has a similar plant in Hamilton, Ontario, Canada, and its main plant and offices are located in Philadelphia. Among the company's brands are Lusterine, Artco, Glyco, Chloral, and full-fashioned needle oils. The southern branch is under the management of W. S. (Bill) McNab, with Robert Cowan, chief chemist and Gilbert Wilson, assistant chemist.

An Engineer's View of Southern Textiles *and* Research

By C. L. Emerson
Vice-Pres., Robert & Co., Inc.

WHEN an engineer speaks, he goes straight to the point. This discussion first points out the trend in textile manufacturing to the South—and before he gets through, Mr. Emerson gives you something solid and important to think about seriously: the need for intelligent and basic research. This is particularly applicable to the textile industry.—The Editor.

* * *

IN THE YEAR 1900 there were only four and one-half million spindles in southern mills, fourteen million in the East and one million in other sections, making a total of nineteen and one-half million for the entire United States. The Federal census figures for June, 1929, show the following spindles in place, South, 18,800,000; East, 15,000,000; all other, 1,500,000.

Note that the South has already passed the North in number of spindles installed, but more striking still are the figures on the number of these spindles which are actively operating. For this comparison we have active working spindles in the South, eighteen million, North 11,350,000; all other 1,300,000—out of a total of active spindles of 30,600,000 for the United States.

Several things are made quite apparent by these figures, one is that the South is rapidly taking over the cotton manufacturing industry. Another is that the spindles in the South are largely working and active, while something is undoubtedly wrong with the industry in New England, since only 11,350,000 spindles of the fifteen million in place are busy. Statistics also show that there has been a slight decrease in the total cotton spinning equipment in the United States from 1924 to 1929; the very considerable growth in the South being more than offset by losses in the East.

This lack of expansion of the industry as a whole rather indicates lack of prosperity. In fact, there has been an almost total lack of prosperity in the East and even in the South we are apparently just emerging from a period in which profits were far from common.

We have noted the shrinkage of cotton textile industry in New England, and, we may be interested to know what has become of it. Some of the mills have been liquidated, and the machinery junked; while some of the stronger and better equipped plants have moved South to participate in the more favorable conditions existing here. The movement has been quite an interesting one. Reliable figures show that during the last five years, ending January 1st, 1929, over one million cotton spindles have been bodily transferred from the North to the South.

MR. EMERSON

This movement from the East has brought approximately $80,000,000 into the South in the last five years. This might be an opportune time to inquire why the mills are moving South. Among the inducements to industry, are an inexhaustible supply of power supplied from our rivers. The South has about two million hydro-electric horsepower, developed and probably that much more which is waiting only the need, to be economically developed. Ample transportation facilities are afforded by many strong railway systems. Our legislatures, have, fortunately, not enacted restrictive laws and our taxes on industry are quite low.

Why Are They Coming South?

Compare our situation with that of some of the New England States from which the cotton mills are moving. We find that heavy taxes are assessed in some instances totalling as much as $1.00 per spindle per year. That is, a 50,000 spindle mill would pay $50,000 for city, county and state taxes. Moreover, the lawmakers in these Eastern states have apparently vied with each other in hampering industry by restrictive legislation.

One of the greatest reasons why the South is attracting industry is that we have a surplus of the best labor to be obtained anywhere in the country. The operatives who work in the mills here are the same kind of people as you and me. They suffer, no doubt, from lack of education and opportunity,, but they come from the same Anglo-Saxon stock and have the same traditions and ideals. Contrast this with the conditions in Eastern Mills where foreigners are largely employed. I have seen notices posted in mills in Massachusetts in six different languages of which I could read only one.

We have been hearing for sometime of certain labor disturbances in the states just north of our own. No human institutions are perfect and friction must from time to time appear. I cannot conceive, however, that we will suffer seriously in this respect. A very potent reason for this confidence is the attitude of the mill owners them-

selves. I want to quote here from an address made some time ago by Mr. W. D. Anderson, president of Bibb Manufacturing Company of Macon, Georgia. Mr. Anderson said, in part: "I am inviting your thought to the task of deciding whether or not we who own and operate the mills of the South are exercising ourselves to go to the limit of ability and propriety in seeing to it that those who labor with us in this great industry are receiving everything that is their due." When leaders of the industry are thus searching their own conduct to be sure that everything possible is being done for the welfare of their people, you may be sure that conditions will improve, and only those difficulties foisted on the mills by outsiders and trouble-makers will occur.

We are sometimes told that our advantages, briefly catalogued, are only temporary, and that in a few years the influx of new industry will increase our taxes, our power costs, and our labor costs, bringing them on a parity with the North and thus choke automatically the stream of development. This may have in it some element of truth, but I submit to you at the same time that a considerable part of the answer is in our own hands. Unless our legislatures pass short-sighted, hampering laws, and unless we permit the increase of our taxes, we cannot fall into the same condition as New England. I have sufficient faith in our leadership to believe that this will not be allowed to happen. On the side of production costs we have an unalterable advantage in our mild climate.

IN this discussion, Mr. Emerson covers interestingly the reasons for the trek of the textile industry Southward. He tells also of the results of these influences, not only in cotton manufacturing, but in many allied lines of textile manufacturing as well. This paper represents an abstract of an address recently by Mr. Emerson, who is vice-president and chief engineer of Robert & Co., Inc., Atlanta, Ga., before the Atlanta Rotary Club.

Cheaper Living in the South.

People will always be able to live cheaper in the South for the very simple reason that they require less clothing, less fuel, less heavy foods, and can live comfortably in houses that cost less money. Unless we wilfully destroy or abandon our advantages or change our climate, I hardly expect that any of us will live to see the day when textiles cannot be more economically produced in the South than in the East.

Recognizing these facts and conditions of our industrial growth, some people have asked whether this development is basically good or bad. No doubt, among those concerns who have moved from the East to the South there have been a few undesirables. Some "carpet-baggers" must follow any major movement. We believe, however, that the percentage of these undesirables is very small and represents but an insignificant blemish on the picture of increased wealth, increased capital, increased purchasing power and most important of all, a decrease of unemployment.

Let us take a specific case and examine it. Take the plant at Rockmart, Georgia, now under construction by the Goodyear Tire & Rubber Company. This is, basically, a 50,000-spindle cotton mill. In the first place, when it is completed, it will give employment to over 1,000 people. These employees will receive in a year over $750,000 in their pay envelopes. When executive salaries and local purchases of supplies, etc., are taken into consideration this becomes over a million dollars expended yearly, not including the cotton which would have been sold somewhere in any event.

It will certainly mean a good deal to Rockmart to have this million dollars spent every year in its environs. The matter of putting only one million dollars annually into circulation is nowadays no great matter, but when this is multiplied by tens and shortly by hundreds as other industries spring up in our neighborhood, we have a truly tremendous quickening of trade and enlarged opportunities for profit.

We have spent a great deal of time on the cotton textile business because it is at present our largest and best known industry and has a longer history to observe, but we are rapidly broadening our scope of manufacturing and it may readily happen that the most rapid deevlopment of the future will take place in other lines.

The great rayon (or artificial silk) plant which is nearing completion at Rome demonstrates the fact that Georgia is just as good a location as can be found in the Southeast for this branch of the chemical industry. No one knows how many million pounds of rayon the United States can absorb.

We have, this year, had very interesting developments in the manufacture of automobile casings and my expectation is that before many years every one of the larger rubber companies will have a branch plant in the Southeast, and given intelligent effort and cooperation.

Just over the horizon is the development of a great industry to turn out the machinery used in these factories, particularly the machinery for cotton mills. Naturally we find here great inertia to overcome, but there can be no doubt that the future will see such a development take place.

The South's Opportunity.

The Carolinas are securing many plants of a new type, silk weaving, throwing and knitting plants are springing up. I want particularly to direct your attention to the manufacture of silk stockings. From a casual survey, it would seem to me that before long all stockings will be silk and most of them will be full-fashioned. It would also seem logical that the industry supplying this demand will eventually move South just as the cotton mill industry has already done.

The South faces an unique opportunity. Never so far as I have been able to discover has an industrial

civilization been evenly distributed and superimposed on a rich agricultural community.

The widespread lines of the electric power companies have brought about the decentralization of manufacturing. When steam furnished the motive power there was a cumulative tendency to crowd factories into large cities. Since 1900 this condition has been changing and will change more rapidly.

The South's Responsibility.

For these reasons it seems that we are about to witness a new type of civilization. We will see a great industrial development spread over the greater part of our state and combined with an improved agricultural system, rich in natural resources. In the opinion of many able men, this will result in great prosperity for this section. In fact, it is now being said that the next twenty-five years will see a greater growth of wealth in the Southeast than has ever been experienced by any section heretofore.

Even from the most conservative viewpoint, we are faced with a great expansion of industry and almost unavoidable prosperity for the section.

What will you do with your prosperity?

Here I must necessarily leave the solid back ground of engineering statistics and facts to speak of matters more tangible and I realize the risk of having these words considered as vague generalities, but I am going to take the risk.

What will you do with your prosperity? Probably you will build fine houses, buy expensive automobiles, airplanes, perhaps, and have a hell of a good time generally. Very well, but if this is all, then we fall far short of our possibilities. We should go somewhat farther than this.

The foundations of the prosperity we shall enjoy go down through the classes to which we are accustomed, and to rest on the bedrock of the dirt, the sweat and the effort of the laborer in the mill and the farmer in the field. We must provide advantages for these people or our foundation is insecure.

Some great man has said that civilization is a race between education and disaster. Science has given us a sudden access of mechanical and electrical power, it has placed vast resources in our hands, and unless we educate our next generation in mind and spirit, we will find these resources and powers can be turned to purposes of destruction as well as construction.

How are we fulfilling this obligation at present? Let us face the truth, no matter how unpleasant. In this instance it is extremely unpleasant for we find that the southeastern states as a whole rank very low as compared to the rest of the union in school advantages and of the southeastern states only one stands lower than Georgia in expenditures on education. In Georgia we spend annually more money on tobacco alone than is devoted to the entire school system, including the colleges. It is rather a gloomy picture.

But the subject of education is a very extensive one and I wish to direct your attention only to one particular phase of it before I close. Our president, Herbert Hoover, has said that one of the greatest needs of the United States today is for more scientific research work and workers. This need may not have been apparent to many of you and certainly my view is not wide enough to comment on the correctness of the statement that this is one of the great requirements of the country, but as an engineer, I do know that it is indeed the greatest need of the engineering profession.

The engineer is, in reality an interpreter. The classic definition of engineering is that it is the science and the art of harnessing the forces of nature for the use and service of men. The scientist, however, is the man who discovers the secrets of nature and fabricates the harness. The engineer takes this harness from the scientist and helps the contractor put it in place. If the case in point be a waterfall, the scientist works out the laws of hydraulics, the engineer learns them and with their aid draws his plans, and the contractor with derrick and shovel and dynamite conjures the eternal rock until the waterfall is securely harnessed for the service of man.

A Plea for Research in the South.

"ANDREW MELLON * * * is seldom accused of being an impractical man, yet some years ago he made a gift of $100,000 for the purpose of establishing the Mellon Institute of Scientific and Industrial Research, Department of the University of Pittsburgh. This institution is now not only a focus of scientific achievement, but is enriching further the wealthy industries of Pennsylvania.

"The South needs, in fact must eventually have, similar institutions if it is to keep faith with its industrial development. Unless some of our prosperity is diverted into such channels we must finally fail of the utmost reach of our possibilities."

We all know and appreciate the man in the construction business. We know what he does and how he does it. The builder receives great recognition and the successful one much cash. The engineer and his work present no mystery and he also is receiving in many instances a stisfactory return for his labors; but the scientist, the man who provides the ammunition for the engineer and builder, how does he fare? Probably no class in the world is so little known or so meanly paid in comparison to their mental attainments, and the value of their contribution to society.

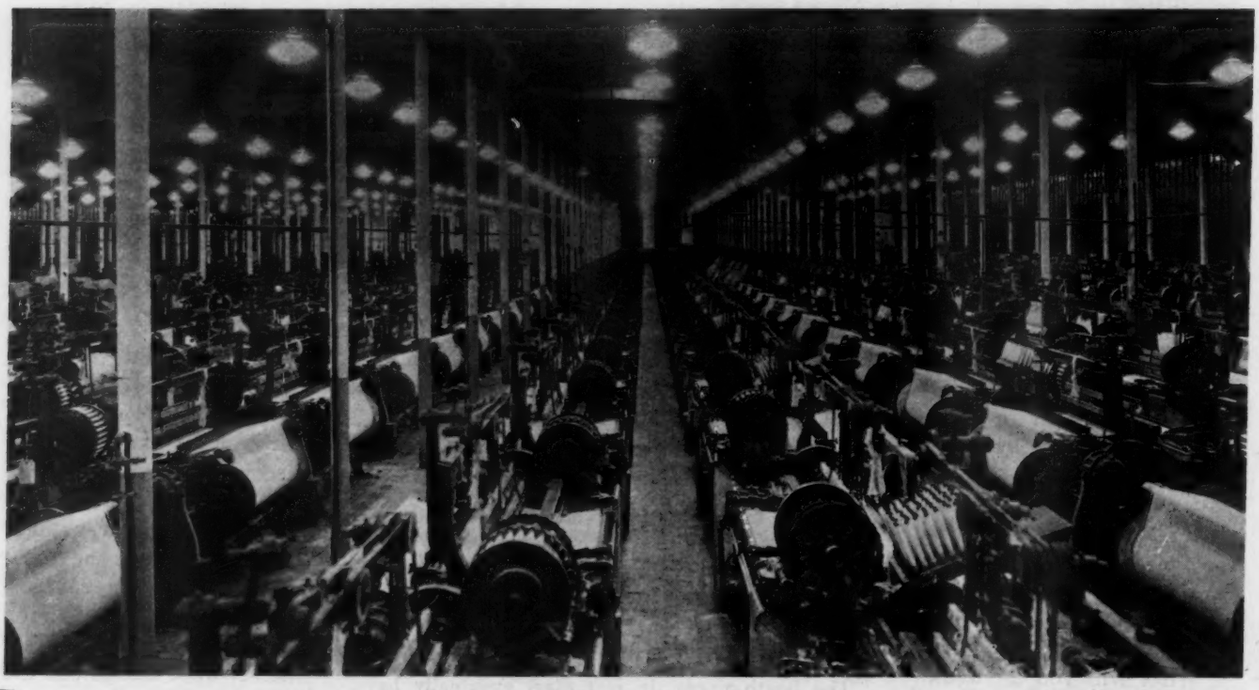
Possibly the words "scientific research" convey to you an idea of some impractical theorist delving dustily among his laboratory paraphernalia, producing nothing but theories which practical business men cannot understand and do not care to hear about.

Let me cite you an example of what research may actually mean.

Take the electrical industry. There is something not in the least vague. It is a billion dollar industry. We are all familiar with the used comforts, yes, the necessity of electrical supply. If the flow of electricity were totally shut off even for a day, think of the consequences. The entire business and social life of the community would be at a standstill. Electricity has certainly become very intimate with all of

(*Continued on page* 1306.)

Lighting *in* Textile Mills



An Example of Weave Room Illumination.

By Russell J. Waldo

WITH the approaching of the season when artificial lighting will be required more for day shift operation, the accompanying report of a survey of textile lighting practice will be of particular interest. It covers several different types of plants, and will appeal to both single and double-shift operators.

WHEN the National Lamp Works called upon me to visit typical plants in various parts of the United States, together with one of their engineers, to determine the status of lighting in the textile mills, the call was readily accepted because of its educational aspects.

During this trip mill executives went as far as to claim that light was one of the important provisions in their manufacturing program, ranking in importance to the selection of efficient workers. They acknowledged that, even with good machines and efficient workers, the maximum efficiency could not be attained without sufficient light to be of real service to workers.

In discussing light with one of the largest blanket makers the writer received some most interesting ideas. "Although light is one of the most essential requirements of modern manufacturing, it is too frequently one of the last to be appreciated. This can probably be laid to the fact that there is extreme difficulty in determining the extent of the losses chargeable to poor lighting of plants. Were it possible for plant executives to so accurately analyze their production costs to determine exactly what portion of that cost was directly chargeable to inadequate light there would be, I am sure, no difficulty in inducing mill superintendents to change their lighting systems to improved methods."

This statement was substantiated by at least a dozen others who had changed their lighting systems and earned greater profits after that change.

Another helpful remark came from the superintendent of one of the leading textile mills, "Weaving rooms of textile mills were perhaps the first place where the need of better lighting was evident. Here the finest of work requires the proper amount of light to facilitate the work of the operative. When light was first put upon the executive table for consideration it was natural for us to give the worker too bright light, feeling that it was required. However, we soon found that this was equally as bad as inadequate light upon the work. The glare from localized lighting proved a detriment to efficient workmanship. It was more distracting than inadequate light, we soon found. It was therefore necessary to make some studies as to the proper amount of light which was accomplished after changing of a few bulbs of different wattage.

"After five years of better lighting we have found that good lighting lessens the work of the hands and shortens the time required to accomplish the work. Improving the light in our weaving room increased our production eleven per cent in less than two months time. It was found to be correct light that permitted the worker to move along in his work without dodging

shadows of the inadequately lighted plant, supplemented by no glare which increases his confidence in himself and he moves about with greater surety that he is right."

A study of the accident frequency rates of the larger plants indicates that the greater number of accidents occur in the Winter months, when the plant is less effectively lighted. Headaches are more numerous in plants both under-lighted and over-lighted. The varying candle power at the happy medium of well lighted plants allows for some variation from the set standard, of course, depending upon the worker and the material being worked on.

A study of one of the largest hosiery mills in the country credits light with increasing their production at least twenty per cent. The plant proved a profitable study for the writer, who spent two days there.

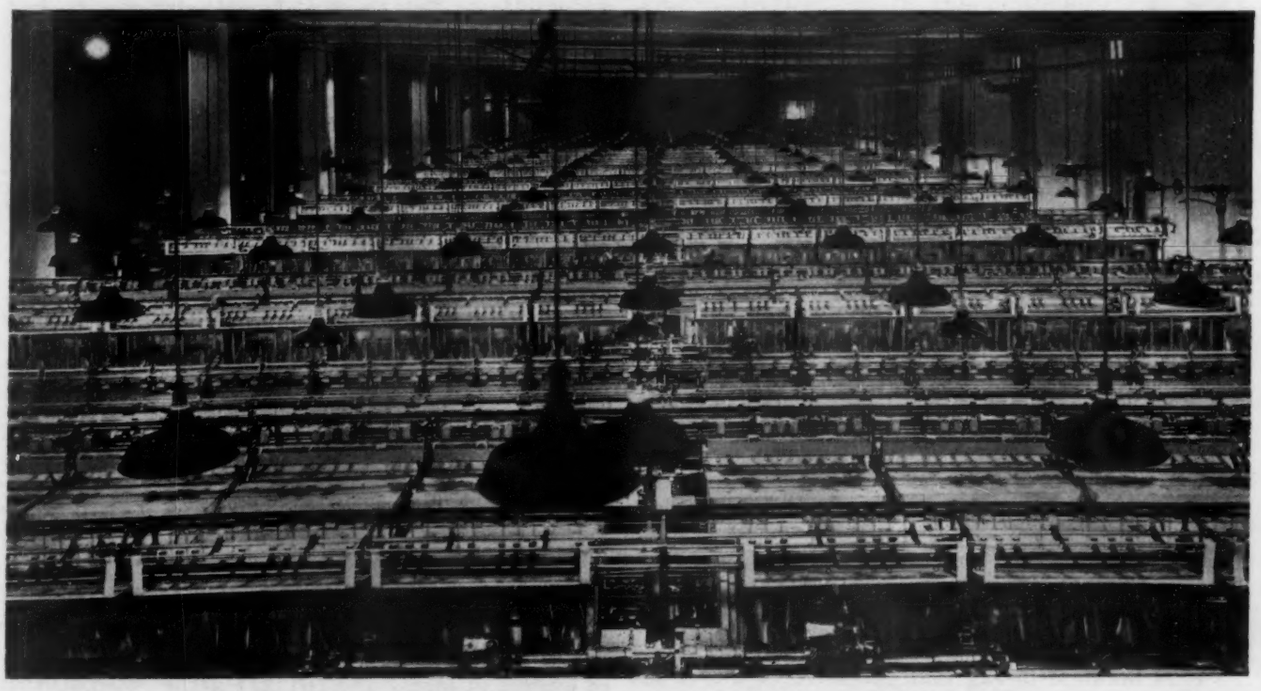
Here the inspection room is lighted by outside light for the day force who work with their backs to the windows. Curtains are provided of unusually thin material which diffuses the sun's direct rays during the afternoon hours. The walls and ceilings are painted in light cream, lending the greatest possible aid to the workers. Mercury arc lights are provided for those who must work by night. This light has proved unusually effective in inspection and the night force can produce as much work as the day force because of properly lighted work rooms.

Modern lighting standards place the light units higher above the floor. The bulbs are of increased wattage and light is distributed over a much greater area than in the older systems.

A venetian blind is now available which permits the reflection of outside light up to the ceiling instead of directly upon the work. This blind, consisting of thin wooden slats two inches wide and about two inches apart, has proved most effective in reducing the direct rays of sun and doing so reduces the glare experienced before. The same amount of light enters the room, generally speaking, yet it is reflected up and falls down—a distinct advantage. Upon cloudy days the blind is easily raised out of the way.

For the coarsest of work in the cotton mills such as opening bales, picking, and the many operations requiring less exacting vision, lower candle power lighting at the work has been found sufficient. As the nature of the work becomes more exacting, such as carding, slubbing, and drawing, the candle power should be increased. The spinning, twisting, knitting and looping rooms require at least twenty foot-candles while the most exacting operations as Jacquard weaving, inspecting, and work upon high speed machines, requires at least twenty-five foot-candles.

The five foot-candles are obtained with lights spaced approximately fifteen feet apart each way and at least twelve feet from the floor. For the best work 300-watt lamps should be used. As the work becomes more exacting the wattage of the lamps is increased and the spacing of the units shortened and often the distance from the floors shortened until in the most exacting of operations will find the units eight or nine feet from the floor and the spacing as near as eight or nine feet apart. The same bulb wattage has been found satisfactory.



Illumination for Night Operation in a Full-Fashioned Hosiery Plant.

The modern bowl reflector in its various types has proved a most effective means of directing the light rays down upon the work. The use of frosted lamps eliminates glare directly under the lamp and for quite a distance from the unit. The shape of the reflectors governs the distribution of light upon the workplace. These are enameled inside both dull and glossy; some have glass linings, and some have diffusers inside the bowl which very effectively diffuse the light rays from the lamp.

PUTTING the TEXTILE HOUSE in ORDER

By Michael Welsh

Article III.

YOU may not agree with everything this man says about the labor problem in this article. But you will be interested in his opinions. Truly this is a universal and growing problem; one which must and can be solved. For his next article in this series, this writer promises us a detailed description of employment systems for large and small mills. Read the discussion here this month and follow it up in the next article.—The Editor.

ANY PERSON who has had the opportunity of interviewing the host of transients who trek from one mill to another in search of work possesses first-hand information of one of the greatest weaknesses in our industrial system. There are many who will at once take issue with the remedies to be suggested later for the enormous turn-over in the southern cotton mills; but it is doubtful that any one can deny the existence of the weakness, and if a more practical solution can be offered, it will assuredly be a worthwhile and timely contribution to the industry.

Analysis of Turn-Over Enlightening.

The few cotton mill managements which have been efficient enough to first determine their turn-over and then to analyze it, have been amazed at its high percentage. They have been enlightened by the facts portrayed by the analysis. They have begun a study which, if carried through along intelligent lines, will enable them to materially strengthen their organizations.

Intangible Turn-Over Costs High.

It is needless to say that excessive turn-over in any organization is expensive. That fact has been established so long that even those who would oppose the necessary changes to remedy it, will have to accept it. The mere knowledge that it costs money to have to "break in" and train new employees, should be sufficient information to cause any organization to consider their employment problem seriously. Unfortunately, the direct expense often charged to a high turn-over is small compared to other costs which are not so easily traced to the employment system, but which most assuredly belong there—in part, at least.

The employment problem affords a dual consideration—an economic and a social one. The former being even more intangible than the latter.

Before attempting to illustrate how an intelligent employment system will help to remedy some of the existing evils which either directly or indirectly increase manufacturing cost and react through a social mal-existence, it becomes necessary to "take the bull by the horns" and state that the present systems in general use in cotton mills throughout the South are very, very inadequate, unjust, and unsound. In making this statement there is no intention on the part of the writer to cast a reflection upon the overseers of the mills, for upon them has rested great responsibilities in the past, and they have measured up wonderfully, considering the multiplicity of their duties, their advantages, and their equipment. It cannot be said, however, that they as a whole have either the time or the ability to give the hiring, firing and placing of employees the proper consideration. The lack of this competency has not only proved expensive to the mills, but has also been most influential in increasing the number of human derelicts among cotton mill workers.

Discussion of a Few Outstanding Weaknesses.

Textbooks devoted to the study of employment are filled with theoretical arguments for a centralized system of hiring and firing, together with all the frills and accessories. Many of them are practical and logical, others are somewhat lacking in the practical side—particularly insofar as their adaptability to all industries is concerned. In this article only a few most noticeable frailties of general practice can be discussed.

Overseer's Time Should Be Confined to Machinery and Production.

The textile market has become so competitive that scientific management, from the buying of cotton to the disposal of the manufactured product, is essential to success. It is needless to say that actual manufacturing cost plays a most important role in the struggle for a fair profit. No longer is it pos-

sible to run a mill by slip-shod methods. Quality and quantity production by each department is paramount.

Under a more scientific and efficient system of manufacturing, the duties of an average overseer are greatly increased. He has little time to do anything other than that which pertains directly to the machinery in his department and its production. By relieving the overseer of the responsibility of hiring and placing of new employees, he is afforded a greater opportunity for first-class service in his most important supervisory work. In very small plants this consideration isn't so essential.

Does Employing Require Special Trained Supervision?

Does the employing of labor require special, trained supervision? A majority of those industries which have a national reputation for efficient management have answered the question in the affirmative. They consider their employment departments indispensable. What of cotton mills? The cost of labor is one of the largest items in cotton manufacturing. During the past year in many plants it was three times the cost of supplies and one-third the cost of cotton. Special cotton buyers purchased the cotton, and the supplies were bought by purchasing agents or others, trained to buy supplies. Both the supplies and the cotton, together with thousands of dollars worth of machinery, were handled by employees who were hired and placed by a rule-of-thumb method. Those who are not acquainted with their labor turn-over are apt to feel that the comparison is unfair—for all labor is not employed each year; but it can be proved that in most mills the labor turn-over will run far above 50 per cent, and in some instances, above 100 per cent.

The enormous turnover in cotton mills is not necessary and can be greatly reduced by a more modern employment system. In one plant a party was employed five times in a period of six months. He was unsatisfactory in each case, leaving without a legitimate excuse. He was re-employed each time by the same overseer, and no doubt realized that he "could get back on" whenever he so desired. This one man was responsible for four per cent turn-over for the department. Not only was the mill affected by his moving behavior, but he was affected by the mill's system. Without a doubt the haphazard systems of employing, firing and placing have wrecked the lives of hundreds who eventually become charity cases.

Mental, Physical and Moral Qualifications Rarely Considered.

Mental, physical and moral qualifications of applicants for work are rarely considered by overseers when employing. An applicant's version of his own fitness for work and his ability to mechanically perform gets him the job. He might be a half-wit, a thug, physically unfit or even inflicted with a contagious disease. His future relationship, whether it be good or bad, is rarely ever contemplated. He is merely hired, and, just such a slip-shod manner, he is generally fired. No unbiased analysis of circumstances surrounding his dismissal is made.

A Mill's Responsibility.

A mill's responsibility in employing is not limited to the value each individual can render his department, but every other employee is entitled to certain protections which the mill alone can offer through a competent system of employing. Although a diseased person may be able to perform his individual task satisfactorily, he, through the germs of his disease, endangers the health of his fellow-workers. Incapacities on the part of seasoned, faithful employees can frequently be traced to disease, carelessness and filth of newly-hired labor.

The employment problem is a mammoth one, and cotton mills have too long minimized its importance. They are now afforded an ideal opportunity to strengthen this most important element of manufacturing. Labor is plentiful and there is no reason why mills cannot weed out that garden and build up a personnel of their organization.

Certainly, as is depicted in the acompanying cartoon, you wouldn't sow weeds in your garden, and according to the experience of mills that have investigated, this is the inevitable result of a slipshod method of employment.

In the next article in this series, employment systems for large and small mills will be recommended, and a few of the expected objections to them will be discussed.

Observations of HANK G. SPINDLE, SUPERINTENDENT

By H Gilmer Winget

Article III.

MR. WINGET is superintendent of a couple of mills in Gastonia, N. C., and this is the third conversation he has reported with his friend, Hank G. Spindle. Every time the old boy has had something to say with plenty of meat in it; and this month his talk is no exception. Mr. Winget sees him frequently, and says he will be glad to ask him any questions which you readers would like to have him discuss. If you want Hank's opinion on any mill subject, send it to him in care of COTTON.—THE EDITOR.

WHILE visiting our friend Hank G. Spindle, the other day, I was fortunate enough to find him in a talkative mood. I hardly know whether I should say fortunate though, for I cannot recall the time that I have seen Hank when he was not bubbling over with chatter. I was extremely glad to find him ready to discuss matters so freely at this particular time, however, for I was very anxious to find out just what are Hank's ideas of good foremanship.

"Well," said Hank, when I asked him to give me his opinion as to what constitutes good foremanship, "that is a subject of such importance that I would hardly undertake to discuss it in a limited time. However, there are some essentials that I consider very necessary for the success of any foreman, so it may prove worthwhile to mention them right here.

"In the first place, there has never been a time in the history of industry that the foreman attracted the attention he is getting today. And the reason must be due to the fact that there has never been a time in the history of American industry when it was more of a problem to keep business on its feet and operating on a sound profit making basis than it is today. Never before has competition been so keen, and never before has it been so essential that production should be on a high level, with the quality of the product being as near perfect as possible to make a given product. What has been said applies to the American industry as a whole in general, but particularly to the textile industry.

"The foreman is a key man in industry and, as such, holds a position of trust and great responsibility. The duties of a foreman are to direct people in their work and manage the details of the room, acting upon orders of someone in authority. But it is very essential that the foreman be capable of doing some thinking of his own. I am of the opinion that twenty-five per cent of a foreman's duty is technical, while the other seventy-five per cent has to do with the management of people. Now, as we have a different problem in each and every employee, it is quite evident that a foreman must be a student of human nature in order to cope with all situations that may arise. A foreman then, must know the people. As has been said by the great scholar, Socrates, "*know thyself*," so should a foreman know himself.

"As I have already said, the foreman problem is an outstanding one, and the improving of foremanship is a part of that problem. In the selection of a foreman the following qualifications should be considered:

Technical Training is First.

"I would, without hesitation, put **technical training** first. It almost goes without saying, the foreman should know the technique of the job he is to supervise. If he is to be a good foreman, he must be an expert in his line, and he can only become such by making a careful study of the job, its problems, and the experiences of actual management. It is not likely that the management of people can be learned from books or colleges. It is necessary to be in the front line trenches, so to speak, to obtain the knowledge of the management of people.

Must Be Able to Handle Himself.

Even though technique is only twenty-five per cent of the qualifications of a good foreman, I would say that much study is required, both as to technique and management of people, before a foreman may be classed A-1. Indeed it may be said, that as long as we are foremen or superintendents, we should keep up the study of both of these important essentials to good foremanship. We should never allow ourselves to be self-satisfied with our experiences, for we might awake to find that we do not know ourselves and limitations, all due to the lack of cultivation of previous knowledge.

"Next in line of importance, I would put **ability to handle himself.** No doubt it is very obvious that

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self control is an essential factor to good foremanship. No foreman can successfully supervise other people until he has learned to control himself. The foreman with the so-called 'high' temper must absolutely learn to control it. It takes time, and a great deal of study and worry, to overcome the seemingly uncontrollable temper. The motto of the high tempered foreman should be: 'don't lose control.' I will agree with anyone thatt he control of temper is probably the hardest problem with which we are confronted. It is easy to advise how to act, but rather hard to practice it. A good thing to keep in mind, however, is: 'don't let anyone's temper upset you.' Remember, loud talk does not convince, but a level head and sound reasoning will go a long ways towards accomplishing our purpose. By calmness, an active brain, and a strong hand we can hold control of many difficult things. It has always been easy to find a fight, and very likely it will always be so, but we should not meet fight in an employee with fight. We should give him a chance to cool off, and not reprimand him too harshly before his fellow employees, but after he has calmed down a bit, call him into the office and talk plain and straight to him, keeping cool and free from anger at all times. By so doing, we will stand a much better chance of adjusting the difficulty. Thus we can see the importance of self control to good foremanship.

And Handle People, Too.

"**Ability to handle people** should certainly come next. And in order for the foreman to do this, he must have confidence in his employees. He must believe in their potential possibilities, as well as their present capabilities. He should be able to get out of every person, the very best that he has in him, both for the company and the society of the community. In short, he must be a developer of men and women. He should lead, rather than drive his employees. Leadership has always been an essential to good foremanship, and more than likely it always will be. In this age of mechanical genuises, no mechanical man has been made that can have within his breast a warm regard and love for his fellow worker, and therefore cannot become a human leader.

The Ability to Teach.

"I am afraid there are some who overlook the importance of the next essential, **the ability to teach.** Instruction is certainly a major factor of the foreman's duties. How often do foremen and assistants conduct a person to a given machine and with a wave of the hand say, 'Spool here,' or 'Weave here,' without further instructions? The processes of manufacture may not differ so much in various mills, but the policy of doing things is often different, which is one of the reasons why new employees should be instructed in detail. Most new employees are put to work in the early part of the morning, and as the foreman at this time is generally very busy, the employees do not receive the proper instruction. A few minutes taken up in instruction might be the difference between an efficient satisfied worker and a poor dissatisfied worker. The ability to teach is then an essential to good foremanship.

"Personality and Honesty."

"Much time could be taken on the next essential. **personality** and **honesty,** but space and time permit only a few brief statements here. To be clean in mind, body, and soul is very essential for the foreman if he is to command the respect of his fellow workers. His acts should be open and above board. Nothing that appears to be deceit or fraudulent should show in his intentions. Deceit is one thing; tact is another. Deceit is the misleading of the mind of the worker; tact is the exercising of good judgment that may be used in so many instances. The good foreman should have such a personality that he could obtain company loyalty and raise the social standard in which he lives and moves.

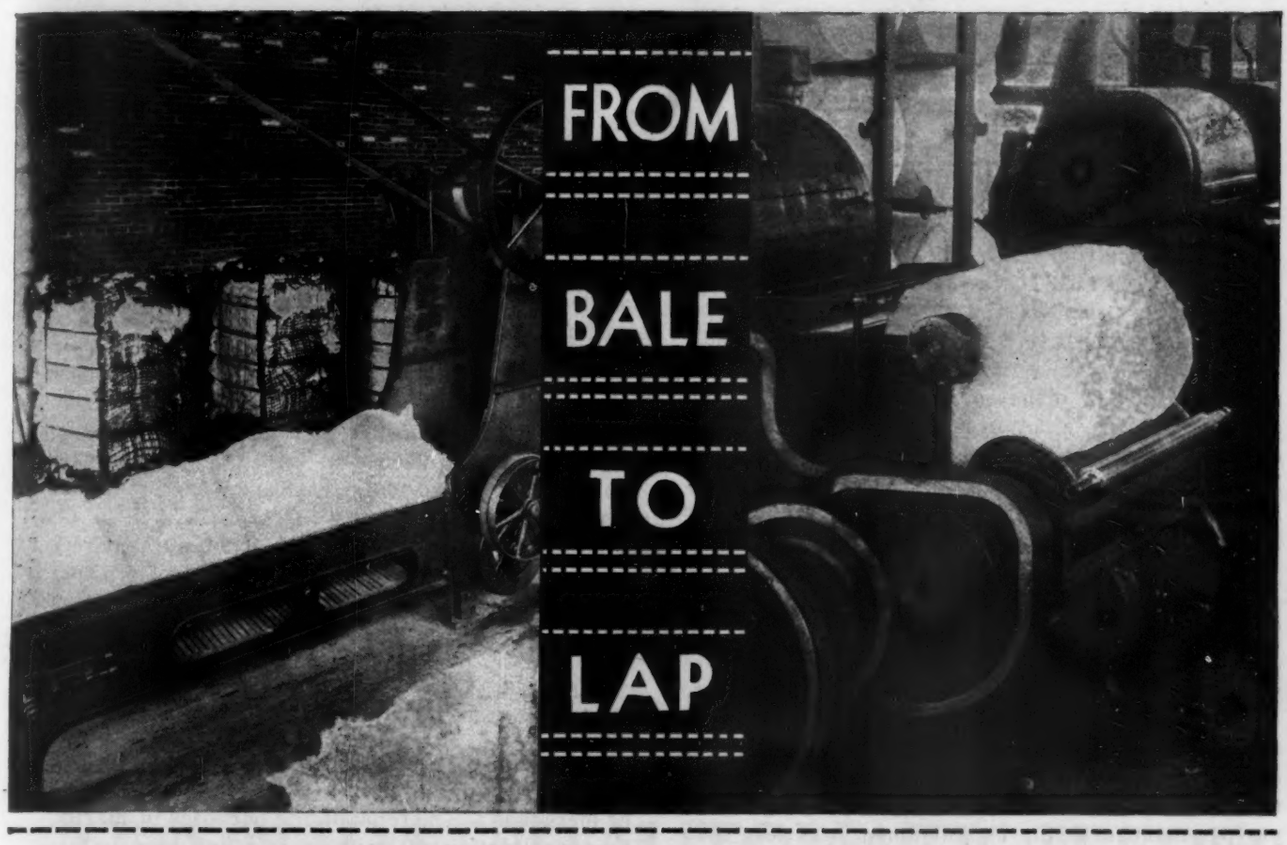
"That reminds me of a nigger story I heard once. (Stop me if you've heard it.) One nigger asked another to explain the difference between courtesy and tact. His friend, who was a plumber's helper, replied, 'Well, de other day I wuz going to work at the Joneses, and when I opened de bathroom door, dere sat **Mrs.** Jones in de bath-tub. I said 'Good morning, **sir,**' and backed out. Now, dat 'Good morning' was **courtesy,** but dat 'sir' was **tact.**'

"And last, but not least, I would say the ability of a foreman **to multiply himself** is a very important essential in successful foremanship. Many foremen have not yet learned the value of doing this. They are so busy looking after minor details that they have little time to develop others into the performance of duties that would aid him in his position. I once knew an overseer of carding that did practically every detail about the grinding of cards; devoted much of his time to combers; did much of the oiling and would at times be found doffing a speeder. He did all this notwithstanding the fact that he had a man to grind, a man to keep up the combers, and a man to oil, and while he was doing these things, some other fellow was loafing on his job. The result was that when he was promoted to a superintendent's position, he had no understudy to take his place. The only thing left to do was to go outside the organization to get a capable man. I do not mean to have some other fellow do your work and you get the pay, but rather manage your room so that some of your assistants will be able to do many of the details, thus giving you more time to handle the larger matters that come up daily. A good foreman will not allow himself to be swamped with details that really belong to some other fellow's job."

So saying, Hank bid me goodbye, and went down the street to see a fellow about a good hunting dog he was figuring on buying.

And whether you believe it or not, these are some of the esentials of good foremanship. Goodbye, until next month.

(This is the third of a series of articles Mr. Winget is writing under this heading. The next will appear soon.—The Editor.)



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CURRENT TOPICS

Talk of the Month.

STYLE conditions today are such that the flexible small mill has an advantage over the big factory—such is the theory put forth by a woolen trade executive. If style changes so rapidly as to make continuity of operation in a big woolen mill difficult, how much so may one figure the condition to apply to a cotton manufactory. The whole emphasis upon cotton goods for several years has been style and demand. To the advancement of styling and designing can be traced the great vogue for cottons this year and the outlook for a continuation of their popularity in 1930.

Does the Small Mill Have an Advantage?

How strange it appears to be talking of small units of manufacture in this day of mergers and consolidations. Bigness would seem to be the measure of success. Yet any large industry in the United States as lately as the year 1927 was constituted in great part of small units. According to census figures the average number of wage earners per manufacturing establishment was less than 47 persons. The country had less than 1,000 plants employing over 1,000 workers.

THESE STATEMENTS would seem to offer the manufacturer of cotton goods a perplexing problem to solve. Mergers for defense is a condition apparently confronting mill men. The problem is one of merchandising. Production methods are capable, all too capable, of meeting the consumer demand. Mills have been consuming more cotton than ever before, in spite of the growth of rayon production, the expanding output of silk goods, and the competition of fabrics made from wool. Yet there has been general complaint of failure to make reasonable profits.

Perhaps the greatest difficulty facing the mils is the devising of ways to meet the new merchandising practices of buying groups. The discussion of developments among retailer buying groups and syndicates goes hand-in-hand with the persistent talk of mill consolidations for better merchandising. The "strong arm" trading methods of merging buying combinations have put the mills and agencies on the defensive. Retaliation through combination is the most obvious way out.

ONE OF THE SUGGESTIONS lately has been "super-sales" organizations among agents, as well as consolidations of manufacturing units. It is notable, however, that the discussion in the primary market brings out in regard to agencies the same point that COTTON (page 1131, August 1929) has made in regard to mills: that cooperation is not imperatively a consolidation affair; that it is possible to promote measures for defense against sharp practices through separate organizations.

"Consolidations for Merchandising Only."

Assuming that the merger may be a stronger means of defense, there is one more way of reconciliation between great consolidations and small (or comparatively small) producing units. The merger is for merchandising purposes primarily. The consolidation of units to this end may be accomplished and the perpetuation of the identity of the single units involved for manufacturing purposes. In fact, it is understood that this is one of the considerations of a big northern merger which has been "in the air" of late.

For several years now the agitation of a five-day week has been proceeding in various directions. The purpose of production of course is merely consumption and the mechanized industries in recent years have perfected operations to a point where the capacity is excessive. The five-day week is considered unattainable and impractical but at least the operation of textile mills at night in the present condition of supply and demand is a thing to hamper the profitable merchandising of goods. Whether by merger, or individually, the units of the industry must find cooperative means to accord supply to demand if profits are to accrue.

Aeronautical Progress Shown in "Southern Aviation."

"WITHIN two years every important center in the South will be tied up in a network of air transportation lines which will carry the mail, express and passengers," says A. P. Barrett, president of Southern Air Transport, Inc., in a feature article in the September issue of SOUTHERN AVIATION.

The first issue of this new magazine, which is being brought out by the W. R. C. Smith Publishing Company, publishers of COTTON, will be off the press September 15th.

In addition to Mr. Barrett's article on "The Future of Aviation in the South," there will be many other interesting and timely feature articles in the first issue by such well-known leaders in aeronautical activity as Clarence M. Young, Director of Aeronautics of the U. S. Department of Commerce; Paul Braniff, head of the Braniff Airlines, in Oklahoma; J. Don Alexander, president of Alexander Aircraft Company; Sherman M. Fairchild, president of Fairchild Aviation Corporation; Phil Love and George Foster, leading airport engineers; Walter Beech, president of Travel-Air Company, and others of equal prominence.

SOUTHERN AVIATION, as announced on this page last month, will cover all phases of aeronautical activity in the South, including the development and operation of airports, flying schools and commercial flying services; the distribution and servicing of planes and supplies; the activities of pilots; and in addition will feature all important developments in the aeronautical industry as a whole. A copy of the first issue of SOUTHERN AVIATION will be forwarded to readers of COTTON requesting it.

CONSOLIDATED AUTOMATIC FEEDER
BUCKLEY OPENER AND BREAKER LAPPER

OUR Consolidated Feeder, Buckley Opener, and Breaker Lapper is a combination of a New Automatic Hopper Feeder, and Improved English Buckley Opener, with 41 in. diameter Cylinder and Redesigned Single Beater Breaker Lapper. The combination of these machines has reduced the amount of labor required and increased materially the production per machine. These results, coupled with the superior opening and cleaning obtained, mark a real advance in the Preparatory Process of Cotton Spinning.

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May we send you detailed information about this unit?

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BUILDERS OF COTTON PREPARATORY AND SPINNING MACHINERY

How much effectual cooperation is being effected through associations is a matter which will become more apparent in retrospect, but an important current development is the effort of Cotton Textile Institute, Converters' Association, Association of Cotton Textile Merchants and Down Town Textile Credit groups in New York toward securing uniformity of sales terms through joint action. There is evidence that group action has to some extent prevailed against bad practices and by so much hope is aroused that association activity will eradicate other abuses.

From the Wool Institute the cotton industry may gain one valuable lesson. That body recently issued a new kind of style survey and it is of a kind that should prove of inestimable value to the industry. Of old, economists have said that over-production in many cases has been the result of continuing to manufacture a product that has gone out of favor. The new kind of style survey, a report of facts from the mills themselves on the extent of demand for various lines, is calculated to show the trend and thereby to forestall a serious accumulation of a line declining in popularity.

When the Big Buyer Meets the Big Seller

When big buying group meets big selling group, what is the ultimate effect upon the jobber? That is a question raised by developments in Germany, where the cartel has the field in both sides. The Association of Velvet and Plush Manufacturers at Crefeld has decided to cancel its agreement with the jobbers' group and this is reported as threatening the existence of the middle man.

Of interest and importance to all manufacturing interests is the plan of the United States Department of Commerce to compile distribution data henceforth similarly to production statistics as in the past. A census of distribution will be taken next year for the first time. It will be coordinated closely with the census of manufactures.

Our Changing Exports.

IN RELATION to the general aspects of the tariff, it is appropos to note a few facts about this country's exports during the first six months of revision proceedings in Washington. Outgo of those things on which no or low tariffs are imposed abroad tended to decline. We exported fewer raw materials, about the same volume of foodstuffs and slightly fewer semi-manufactures than during the corresponding period of last year. But the value of exported finished manufactures, which, as a rule, have to surmount high tariff walls, increased about 20 per cent. They trebled in value the imports of finished manufactures. The figures are in line with a tendency towards manufactures becoming the giant item of exports, while crude materials, for producing the manufactures, are becoming the dominant item of imports.

Nearly all classes of exported manufactures increased in volume during the first six months of this year. It is noteworthy that machinery scored a big gain. This is true particularly of industrial and electrical machinery. These are now major items of American exports. And in much part they comprise the very kinds of machines which enable many American producers to export finished products. What will be the effect on this last of these installations abroad?

Selling House Opens Southern Office.

AN IMPORTANT ANNOUNCEMENT made from New York recently, and reading as follows is certain to have a wide interest in southern cotton manufacturing communities:

> Commercial Factors Corporation announce that on and after Jan. 1st, 1930, that branch of their business formerly conducted through the T. Holt Haywood Department and the Dickson & Valentine Department will be combined into a new organization to be known as Haywood, Mackay & Valentine, Inc., for which organization they will continue to act as factors.
>
> T. Holt Haywood will be chairman of the board of the new concern; Mr. Thomas D. Mackay will be the president; and Mr. J. W. Valentine and Mr. M. R. Dickson will be vice-presidents. The above, together with Mr. Johnfritz Achelis, vice-president of Commercial Factors Corporation, will constitute the board of directors.
>
> Present plans call for expansion of the company's activities. An office will be opened at Winston-Salem, N. C., in addition to present offices in New York, Chicago and San Francisco. Mr. Haywood will reside at Winston-Salem where he will personally supervise the new office.
>
> Mr. Mackay, as general manager of the New York end of the business, will be in charge of all colored goods, while Messrs. Valentine and Dickson will be in charge of grey goods. The New York office will remain at the present location, 65 Leonard Street; these are the same quartres where the cotton goods business of the former firm of Fredk Vietor & Achelis, Inc., has been established for the past forty years.
>
> Commercial Factors Corporation is a division of Commercial Investment Trust Corporation, recently formed through the merger of Fredk Vietor & Achelis, Inc., and Peierls, Buhler & Co., Inc.

The chief significance of this announcement lies in the fact that Mr. Haywood is a southern man trained, after mill experience, in 20 years of merchandising in one of the great New York commission houses, and now finds it advisable to transfer his service for his firm to a southern point. It undoubtedly forecasts a trend that is certain to grow rapidly of bringing cotton goods sales commission house service closer to mills for the proper direction of production, it is held.

It has been obvious for some months, in consequence of the continued success of the Hunter Mfg. & Com. Co., in representing 60 southern mills in New York, and sales agencies all over this country and in foreign countries, that while direct sales representation may have advantages, they cannot compare with the intensive modern mill service given to its clients by Hunter, and notable chiefly for the close cooperation of its mills with the sales forces.

The Haywood department represents 38 mills, many of them on colored and fancy fabrics, on which closer mercantile direction has become imperative because of the extension of the system of small orders, quick deliveries, and constantly changing styles. Mr. Haywood, like several other New York merchants, has foreseen for a long time that it is physi-

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We stand ready, with 36 years of varied experience, in thousands of plants everywhere, to help solve your steam drainage and boiler feeding problems.

At your convenience, a Morehead engineer will be glad to consult with you regarding *your* problems . . . and to explain the Morehead service in detail . . . If you prefer, we will send complete information by mail.

MOREHEAD MANUFACTURING CO.
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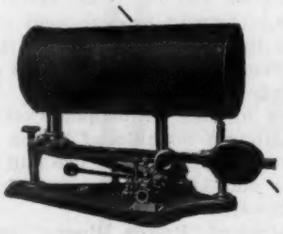

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Back to Boiler
SYSTEM

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cally impossible to stimulate and direct changing mill production from New York, partly on account of the time lost in traveling to and fro, but also because of the physical difficulties to be overcome in going over every order in detail to convince or show the mill man what should be done to enhance sales and avoid accumulations that may lose value quickly because of changing demands.

Mr. Haywood was trained in New York after a long experience in textile schools and mills in the South and he is familiar with every detail of mercantile requirement as it should be translated to manufacturers. By maintaining his organization in New York and centering his effort in the South, he will be free to travel quickly from mill to mill, or to take the market trips that all quick-stepping commission merchants have been doing in recent years.

There is now and has always been some prejudice against New York cotton goods commission men in the South, and they have been justified only because of lack of energy, or integrity on the part of the merchants and not because there is anything better possible in the way of mills sales service than a properly regulated commission house. Whatever may be said against these institutions, it ought to be borne in mind always that it was through the efforts of many such houses in New York financial and merchandising markets that the southern industry started so soundly on its astonishing expansion in the textile field.

What the Southern Mills are Doing

IT has been announced by Frank E. Laycock, superintendent of the Beacon Mfg. Co. mill at Swannanoa, N. C., that further expansion of the plant would take place. The addition will include erection of new buildings and installation of additional machinery, all of which will cost approximately $500,000. Knight C. Richmond is architect and George Barker construction engineer—both are located at Providence, R. I. The additions are to be completed by January 1st.

Announcement has been made that papers have been filed on the merging of Tuckaseege Spinning Co. and Superior Yarn Mills, Inc. of Charlotte, N. C. The two concerns have a total authorized capital of $1,500,000.

The High Point Underwear Co., Charlotte, N. C., is to occupy a new factory in that same city. The building is now under construction and upon completion, the number of employees will be increased, it is announced by the concern.

The new plant of the Oxford Silk Yarn Co. of Oxford, N. C., has been completed and the plant is now ready for operation. The plant is modern in every detail and is equipped to handle own finishing work. It is to be in charge of Mr. Redyke.

The Rosemary Mfg. Co., Rosemary, N. C., is erecting a one story, 150 x 300 feet, building for manufacturing plant.

Cramerton Mills, Inc., Cramerton, N. C., are installing 250 looms in the annex that was built some months back. This addition is to be in operation in a short time.

The Rex Spinning Co., Ranlo, N. C., has installed Breton Minerol process outfit for spraying oil on their cotton.

Officials of the $10,000,000 rayon plant of the American Enka Corp., Asheville, N. C., have announced that the plant will be in full operation by the end of the year. The plant is at present employing between 900 and 1,000 persons. Additional workers are being added all along. The bleaching unit of the rayon plant has been started.

It has been reported that additional equipment is to be installed at the silk mill of the Kattermann & Mitchell Co., Stanley, N. C. Headquarters of this company are at Paterson, N. J.

The addition to the Dilling Cotton Mills, Kings Mountain, N. C., wiill soon be completed, and ready for installation of machinery. New pickers have already been purchased.

Incorporation of Wampum Spinning Co., Lincolnton, N. C., with capital of $200,000, has been announced. Interested parties including R. S. Abernathy, Winter Haven, Fla., and J. A. Abernathy of Lincolnton.

The Hickory Spinning Co., Hickory, N. C., which has a plant of 13,000 spindles, is to be taken over by the A. A. Shuford interests and will be operated as a unit in that group of mills, it was recently announced by A. A. Shuford, president. The Hickory plant recently completed construction of a second dyeing unit, and is equipped for both package and raw stock dyeing.

The Kendall Mills, Inc., Paw Creek, N. C., have let contract to the Southeastern Construction Co., 210 W. Second St., Charlotte, N. C., for improvements to plant. The expenditures are to amount to approximately $40,000. Lockwood Greene Engineers, Inc., Charlotte, are the engineers.

As a reorganization of the Elizabeth Mills Co., Charlotte, N. C., has been contemplated, the first step was made by chartering the Elizabeth Mills, Inc. As a result of this step of reorganization, operations at the mill are expected to be resumed in a short time.

The Whitnel Cotton Mills Co., Lenoir, N. C., recently replaced their old low pressure type with the new 1929 type of high pressure system of oil spraying. This was furnished by the Borne Scrymser Co., New York.

The Griffin Mfg. Co., Griffin, Ga., has been placed in the hands of receiver. The mill buildings, equipment, etc., are valued at $1,250,000. John H. Cheatham, president of the Georgia Kincaid Mills, has been named receiver. The liabilities of the mill are listed as $614,000 and assets $551,000. Several concerns have entered bids for the mill, which has 35,000 spindles and makes a wide variety of products.

The Cochran Cotton Mills, Cochran, Ga., have been sold to J. H. Mayes of Fitzgerald, Ga., according to announcement made by officials of the mills. Mr. Mayes is expected to take active charge of the property at once, moving his headquarters to Cochran. The mill has 5,000 spindles.

The Chatham Rayon & Textile Corp., Calhoun, Ga., has been formed under the laws of Delaware to erect and equip a weaving mill for the manufacture of dress goods material and dress linings. A plant is to be erected in Calhoun. A. T. S. Meldrum is general manager of the corporation.

Announcement of the resuming of operations of the Adams Duck Mills, Inc., which have been idle for several months, was recently made. It is equipped with 7,200 spindles, 178 narrow looms and 40 carding machines, and will give employment to 200 persons.

Officials of the Goodrich Company announce that work on the new $8,500,000 industrial city of Silvertown, near Thomaston, Ga., is moving along at a very rapid gait. There will be two very modern schools, costing $100,000, to provide for the schooling of the 1,200 children that will live in Silvertown. An extensive addition to the Martha Mills at Silvertown has already been completed, and installation of machinery begun.

The Clearwater Mills, a subsidiary of the Goodyear Tire & Rubber Co., Inc., recently took formal possession of the American Textile Company's property at Atco, Ga. The mill will manufacture tire fabrics. Three carloads of new machinery are awaiting installation and additional machinery is expected to arrive soon. Changes in equipment are necessary to convert the mill to the manufacture of tire fabric. Bids will be received soon for the construction of at least 80 new homes in the village addition.

Contract has been awarded by the Willingham Cotton Mill, Macon, Ga., to R. H. Smalling & Sons Co. of Macon to erect a brick and frame addition to their plant. The mill is now equipped with 10,000 ring and 3,600 twisting spindles, 102 broad looms and 60 cotton cards.

The new high pressure type set of "Breton Minerol" process equipment, furnished by the Borne Scrymser Company, was recently installed in the Avondale Mills, Sylacauga, Ala. This is the third installation made by this plant since

Hundreds of chemists are working for you

These are the men who guard the quality and uniformity of Texaco Lubricants. They are as important to you as the men in your own laboratories who control the uniformity of your own textile processes and products.

Day and night, Sundays, holidays, and every day, Texaco chemists are constantly testing, testing, testing—watching every step of the special Texaco refining processes—so that there shall *never* be the slightest essential variation in the quality of the lubricants you use.

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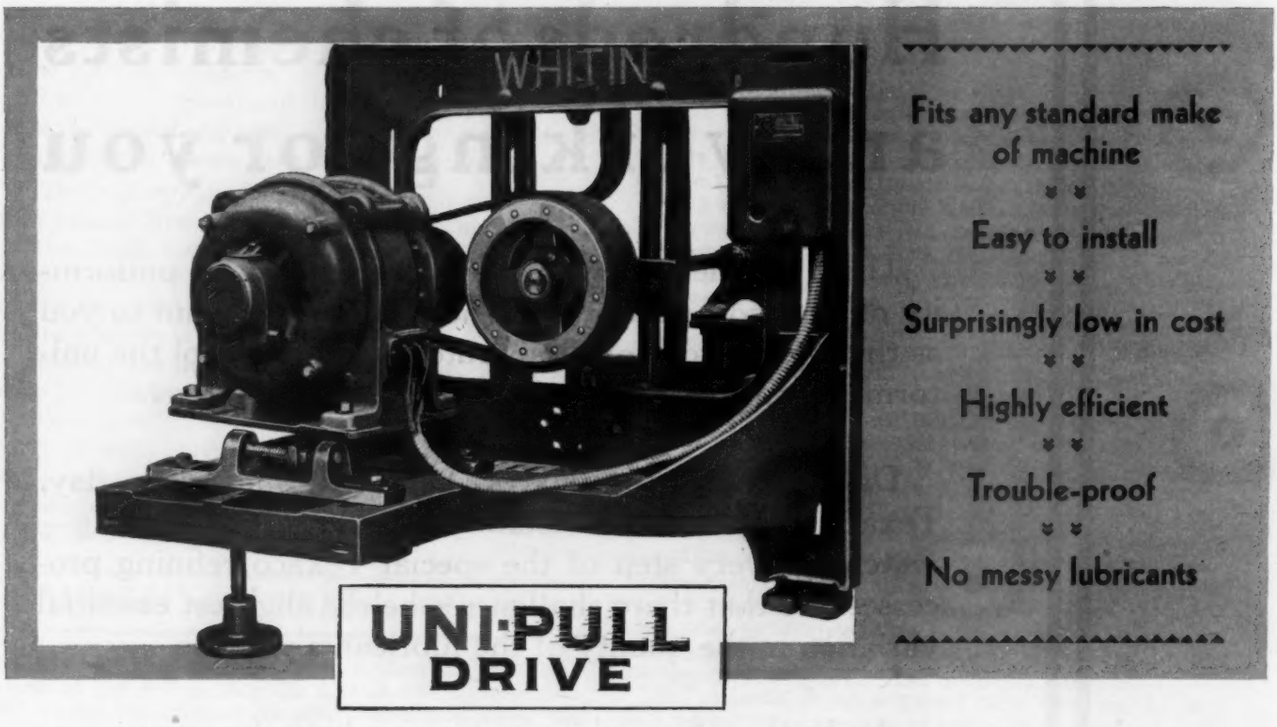

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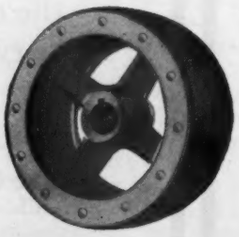
NOW you can modernize the drives on your spinning and twister frames quickly and easily . . . and at minimum cost. The Rockwood UNI-PULL DRIVE is now available as a complete unit, except motor. With our simple instructions, any millwright or electrician can make the change without interrupting production. We can supply to mount on bracket or floor.

Before you purchase any type of short-center drive, investigate the marked advantages of this simple, practical, dependable flat belt drive, sold at a common-sense price . . . . . Send complete data for prices.



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THE OHIO VALLEY PULLEY WORKS, MAYSVILLE, KY.

Divisions of General Fibre Products, Inc.

the first of the year.

The California Cotton Mills Co., Selma, Ala., have motorized their spinning room.

Work on the plant of the Bemis Bros. Bag Co., at Talladega, Ala., has been moving along on schedule. As the foundation of the new office building has been completed, brick work is expected to begin at once. Machinery installation in the main mill building is also well under way.

Every effort is being made to rush to completion the Montevallo (Ala.) Cotton Mills, Montevallo, Ala. Construction of the plant has already been started, and excavation for a 50 x 200 ft. warehouse is to be started at once.

It has been announced by officials of the Chamber of Commerce, Huntsville, Ala., that a new plant will be erected in that city for the manufacture of braids, trimmings, belts and millinery accessories, just as soon as a suitable site could be located.

The Manetta Mills, Lando, S. C., have installed six sets of cards and six spinning frames for production of yarn to go into a line of part wool, 66 x 76 in. blankets.

According to R. S. Dickson, president of R. S. Dickson and Co., investment securities, the proposed reorganization of the Pageland Mills, Pageland, S. C., is merely an arrangement whereby the Pageland Mills, Inc., is being organized to purchase the assets of the Pageland Cotton Mills subject to the debts of the latter concern.

Gaffney Mfg. Co., Gaffney, S. C., which has recently added plant additions, has planned to start work on the erection of 23 additional brick homes for employees, according to announcement of R. P. Carson, secretary. The construction work is to be taken care of by that company.

The Fort Mill Mfg. Co., Plant No. 2, is erecting a cotton warehouse which will have a capacity of 4,000 bales.

The contract for the construction of a new monitor for the roof of the Union Buffalo Mills Co., Inc., Buffalo, S. C., has been let to Potter & Shackleford, of Greenville, S. C. It is reported that this will cost about $20,000.

The Hermitage Cotton Mills, Camden, S. C., have sold the entire mill output to Bay Co., of Bridgeport, Conn., producers of surgical gauze and hospital supplies. It is reported that this will mean an increase in capacity of the plant and installation of additional equipment in the future.

Fred B. Voegeli, president of Hartsville Print & Dye Works, Hartsville, S. C., recently announced a call meeting of stockholders to consider increasing common stock and enlarging of plant with installation of new machinery.

Chemicals are now running through the pipes of the $6,000,000 plant of the Industrial Rayon Corporation, at Covington, Va. According to the manager, L. R. Carrier, the plant will be running full time by Jan. 1. Spinning frames are to be started within two weeks' time.

Construction work has started on two new factories at Rock Mount, Va., the Angle Silk Mills, and Bald Knob Factory No. 2. These plants were originally planned under the name of Virginia Silk Mills, Inc., but the name has been changed to Angle Silk Mills, Inc., with minimum capital $250,000. N. P. Angle is president of both Bald Knob and Angle Mill. Excavation work is now under way.

The General Garment Mfg. Co., Richmond, Va., is to build a $50,000 plant at Petersburg, Va. The building is to be three stories high and entirely modern.

Officials of Shenandoah, Va., are interested in industrial survey being prepared. The city is interested in securing $10,000,000 rayon plant which has been reported to be interested in locating there.

The Buena Vista Textile Corp., Buena Vista, Va., is installing 92 looms and increasing capacity of mill 50 per cent.

A local delegation recently visited Shelbyville Cotton Mills, Shelbyville, Tenn., which mills are under the same management as the Columbia Cotton Mills, Columbia, Tenn. The Shelbyville mill has 14,500 spindles and officials in charge of the local unit state that the Columbia unit must be enlarged. Project would include a mill village and involve local capital.

Harvey W. Gilbert, president of the Sabine District Industrial Commission, has reported that a cotton mill will be erected in Beaumont, Texas or some other city in the Sabine District, work is to be started during the Fall of this year.

It is reported that Texas Gauze Mill, New Braunfels, Texas, has increased capital from $75,000 to $150,000.

Morrillton (Ark.) Cotton Mills, Inc., after being closed for more than a year is to resume operations in the near future, it was recently announced by Harvey C. Couch, president of the Arkansas Power & Light Co., one of the stockholders in the concern.

The Langley mills, located at Langley, S. C., and the Aiken Manufacturing Co. mills, located at Bath, S. C., were sold at public auction at Aiken, S. C., recently for $550,000 and $375,000 respectively. They were bid in by the United Merchants and Manufacturing Co., Inc., of Boston, Mass.

Alden Mills, New Orleans, La., reported let contract to Lionel F. Favert, of New Orleans, for 1-story brick, hosiery mill to be built in that city.

Cotton Comment *by H. & B. Beer*

New Orleans, August 10th, 1929.

THE RECENT GOVERNMENT CROP FORECAST, the first of a series to be released this season, indicated a somewhat larger cotton crop than was generally expected, and had a depressing effect on the market. The prospective crop, however, is so nearly evenly balanced with prospective world requirements as to make for a comparatively steady market until crop prospects change for the better or worse in the future.

GOVERNMENT REPORT

As of Aug. 1st —	This Year	Last Year harvested
Acreage (allowing for 10 year abandonment)	46,695,000	45,341,000
Condition	69.6	67.9
Indicated crop, exclusive of linters	15,543,000 bales of 500 lbs. gross weight	14,478,000
Indicated yield per acre, pounds	159.3	152.9
Ginned to August 1st, bales	86,970	88,761

SEASON'S INDICATED SUPPLY OF AMERICAN LINTERS NOT INCLUDED

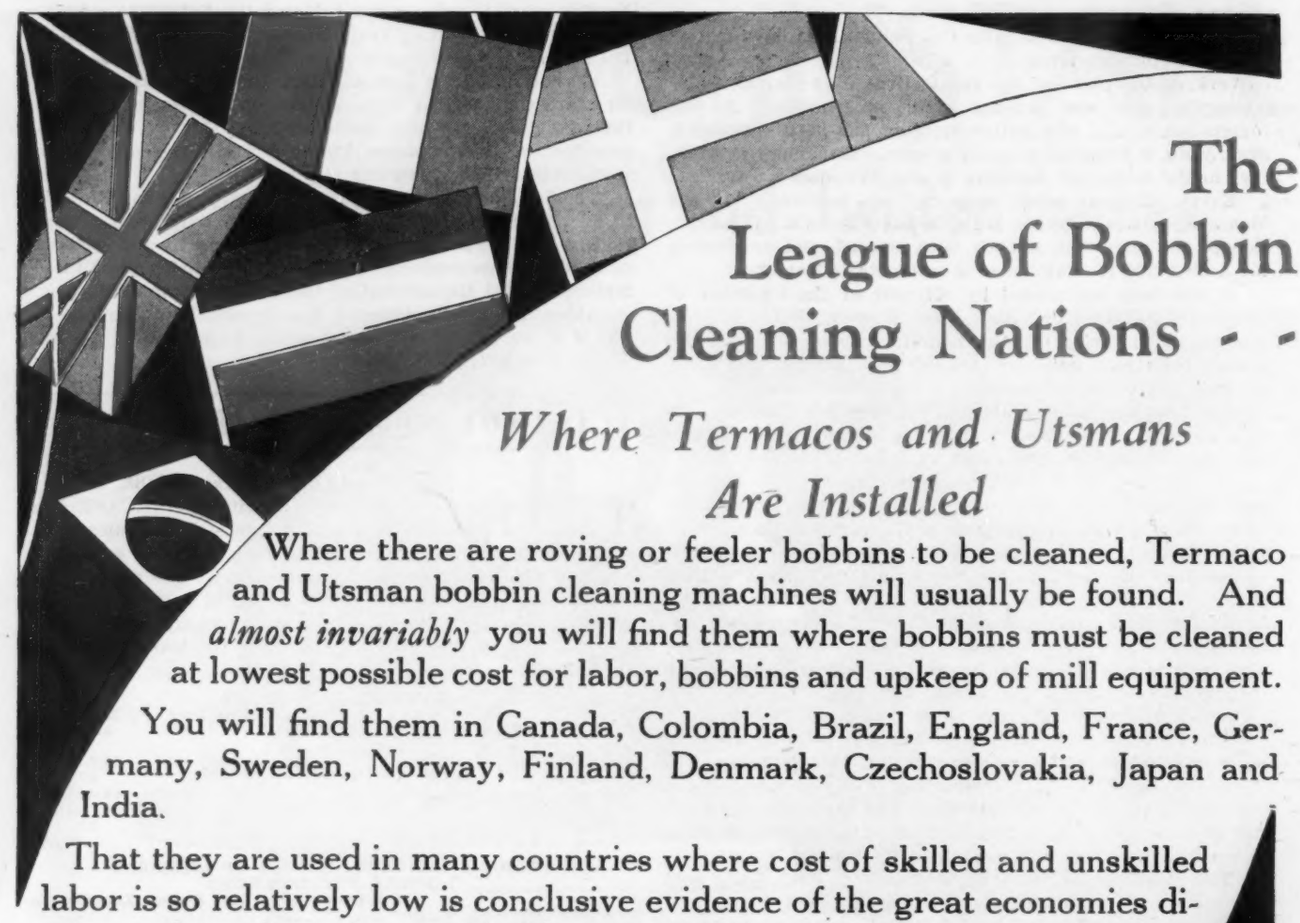
Bales—	This Season	Last Season
World's carry-over, August 1st	4,395,000	5,252,000
Indicated crop	15,543,000	14,478,000
Season's indicated supply	19,938,000	19,730,000
World's consumption, exclusive of linters	(†)	15,256,000
Average price of Middling	(†)	18.92

Today the season's indicated supply of American is only slightly larger than last season's supply, while the price of Middling today is 18.00 against 18.72 this date last year and last season's average price for Middling of 18.92. It is evident, therefore, that cotton, at its present price, under existing conditions, is about at value, perhaps somewhat lower than warranted were it not for the prevailing belief that the growing crop is likely to be a large one.

Considering the reiteration of reports that the boll weevil is more numerous than at this time last year, and the belief that more damage will be done by the weevil than was done by the weevil last year, the government's indicated yield per acre, 159.3 pounds against 152.9 last year, was much of a surprise to the trade.

It is possible, however, that the weevil may do more damage in the future than they did after this time last year. At any rate Washington's comment regarding its recent crop forecast report, stated in part: "In interpreting condition as an indication of probable yields, the board has made allowance for probable loss due to boll weevil, in accordance with its current reports on weevil activity. These reports indicate that if usual weather prevails during the remainder of the season there will be more weevil damage this year than last in all states except Oklahoma and Arkansas. For the United States as a whole present indications point to weevil losses similar to 1927, in which year correspondents reported that the average yield was reduced 18.5 per cent because of weevils."

Notwithstanding the heavy Spring rains in Oklahoma and Texas, it is claimed that a general heavy rain is needed now in Oklahoma and Texas, except in South Texas, while a period of dry hot weather is desired in the central and eastern belts, especially to hold the weevil in check. This feature of the situation has to be reckoned with, as will the boll weevil situation.



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Where Termacos and Utsmans Are Installed

Where there are roving or feeler bobbins to be cleaned, Termaco and Utsman bobbin cleaning machines will usually be found. And *almost invariably* you will find them where bobbins must be cleaned at lowest possible cost for labor, bobbins and upkeep of mill equipment.

You will find them in Canada, Colombia, Brazil, England, France, Germany, Sweden, Norway, Finland, Denmark, Czechoslovakia, Japan and India.

That they are used in many countries where cost of skilled and unskilled labor is so relatively low is conclusive evidence of the great economies directly resulting from the use of a Termaco or Utsman in our own country.

Write for full descriptive literature on these machines. In writing please state whether you are interested in cleaning roving or filling bobbins and, if possible, send a sample of the particular bobbin which you have in mind. If you are interested also in motor-driven machine, kindly give full details, including voltage, phase and cycle of your current.

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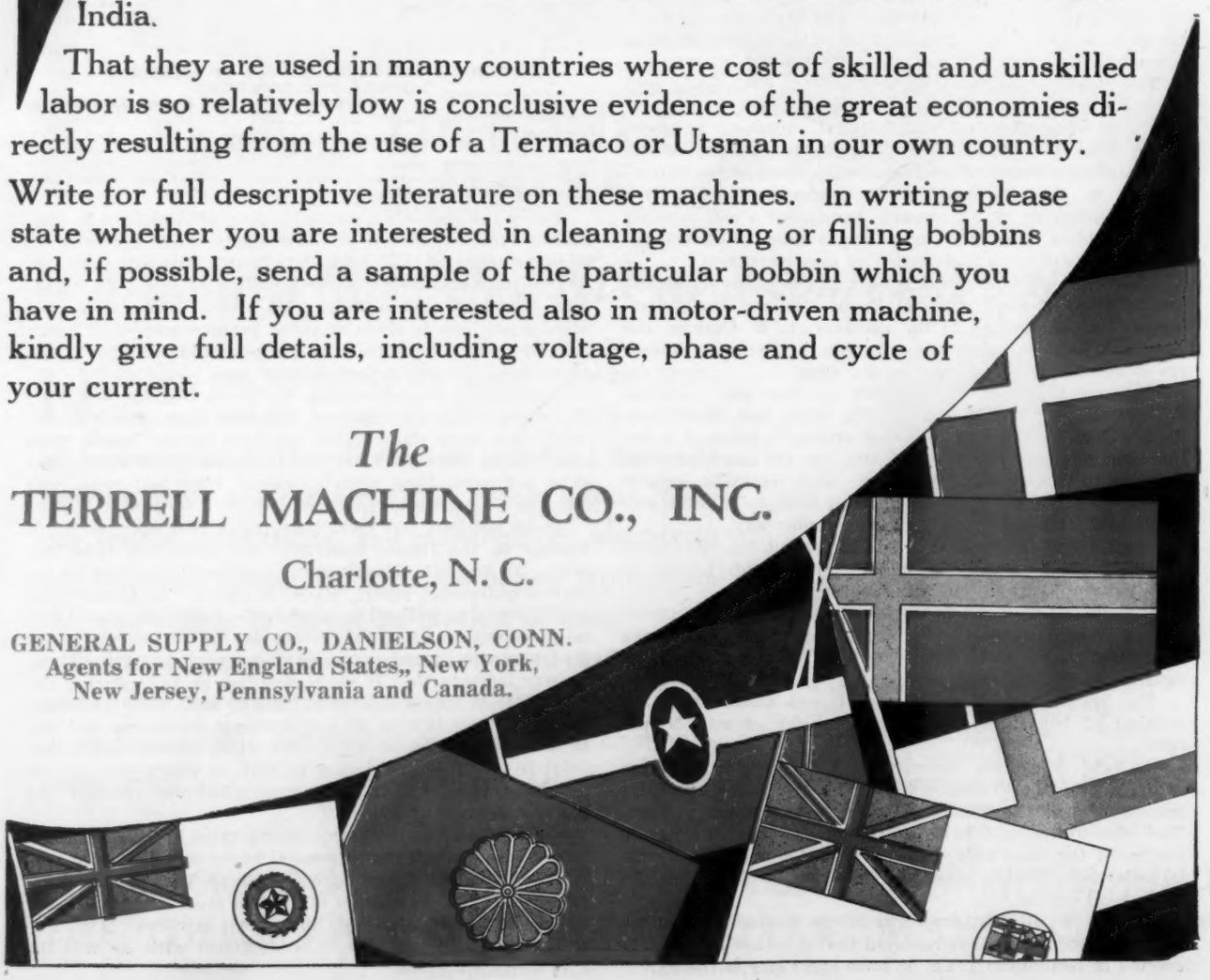
Agents for New England States,, New York,
New Jersey, Pennsylvania and Canada.



Another surprising feature of the government report is that returns indicate a crop of only about the same as last year's west of the Mississippi River, whereas a yield of about 1,000,000 bales larger than one year ago is indicated for east of the river. In other words, prospects are for 8,878,000 bales against 8,804,000 last year west of the Mississippi, whereas to the east of the stream, indications are for 6,665,000 bales against 5,674,000 last year. The trade was amazed at the large allowance for Mississippi.

The government's crop forecast by states, compared with last year, follows: Virginia, 46,000 bales against 44,000; North Carolina, 787,000 against 836,000; South Carolina, 909,000 against 726,000; Georgia, 1,182,000 against 1,030,000; Florida, 25,000 against 19,000; Missouri, 174,000 against 147,000; Tennessee, 468,000 against 428,000; Alabama, 1,317,000 against 1,109,000; Mississippi, 1,921,000 against 1,475,000; Louisiana, 715,000 against 691,000; Texas, 4,798,000 against 5,106,000; Oklahoma, 1,275,000 against 1,205,000; Arkansas, 1,449,000 against 1,246,000; New Mexico, 91,000 against 88,000; Arizona, 153,000 against 149,000; California, 223,000 against 172,000; others, 10,000 against 7,000; United States, 15,543,000 against 14,478,000.

An unfavorable development in the textile situation is the big strike in the Lancaster district of England where it is said that 500,000 employes are idle, due to employers deciding to reduce wages 12 1-2 per cent, which the workers refused to accept. Meanwhile efforts are being made to try and bring about an early settlement of the dispute. Otherwise, except for unfavorable textile trade conditions in Germany, the trade outlook, especially in the United States and Japan, remains favorable, as a rule.

ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK JULY STATISTICS

Yards	July 1929 4 Weeks	June 1929 4 Weeks	July 1928 4 Weeks
Production	234,439,000	285,928,000	221,826,000
Sales	262,889,000	228,244,000	187,439,000
Shipments	252,779,000	252,008,000	217,540,000
Stocks	382,920,000	401,260,000	463,270,000
Unfilled orders	368,858,000	358,748,000	272,227,000

July sales of domestic cotton goods 112.0 per cent of production, shipments 107.8 per cent of production. Stocks at the end of July decreased 4.6 per cent, and unfilled orders increased 2.8 per cent. July production over 20 per cent less than June, stocks 17 per cent less than June, unfilled orders 35 per cent more than July 31st last year.

New England Mill Situation

August 15th, 1929.

THE PROBLEM of mill taxation in New England mill communities has been a troublesome one to solve and has grown acute in several of the Massachusetts centers. For generations in the industry it has been the accepted policy for manufacturers to bear the larger share of the local tax burdens on the theory that by maintaining low cost living conditions it enabled operatives to be comfortably supplied with municipal facilities that would make them content to work in the mills. Originally, of course, as in many southern mill centers today, the mills owned a substantial part of the villages and bore a large share of the cost of schools, homes, and even church maintenance.

The Tax Problem in New England.

The ownership of corporation houses for operatives has almost completely passed out as a mill policy. Operatives have been encouraged to own their own homes or it has been profitable for private parties to build tenement properties. As the communities have grown in size the cost of maintaining schools and providing municipal improvements has increased rapidly but in the larger mill centers like those in Massachusetts, the mills were numerous and profitable enough to bear tax costs without complaint.

During and following the World War taxes rose rapidly and were tolerated for "winning the war." It was necessary in many instances for mills to change their capital structure, by stock dividends, to avoid many of the practices in valuation imposed by Federal authorities for the collection of corporation or income taxes. This in turn led to sharp advances in assessments levied on the properties by local boards and many mills having machinery years old were assessed on the "basis of replacement costs,"—which of course meant a rise in valuations of as many as three times the real worth, based upon earning capacity in normal times. After the slump in conditions following 1919-20, the extent of the rise in assessments became serious.

Several factors contributed toward increasing the revenue needed for running many communities, but it was not until five or six years ago that the average citizen and home owner began to sense the direction in which municipal expenditures were drifting. New concrete or macadam roads were demanded by users of automobiles and that expense alone caused an enormous rise in municipal debts. There was a rush to build new schools in communities where war time needs forced a toleration of insufficient accommodations. There was a very general advance in salaries and wages, city laborers receiving more than twice the average exacted before the war, and school teachers, firemen, policemen, and other city employees being accorded advances in keeping with the general advances.

Protests to tax boards became constant. Suits were instituted, and generally compromised, on the score that it would not be prudent to appear in court to defend tax policies that were known to be legally untenable, although necessary in maintaining mill community life in accord with modern demands and conditions. In some cities the governments were willing to adopt policies of retrenchment and tax boards and manufacturers gradually came together to agree upon policies of revising the methods found necessary as a result of war consequences.

Now Up for Discussion Again.

In other centers, notably in Fall River, it has again become necessary to lay foundations in master's hearings for the presentation of facts to the higher courts for the purpose of forcing a proper consideration of the rights of mills for equitable assessment regardless of what had been the accepted custom for years. At present half a dozen cases are going through court processes and apprehension is growing that if any of them are pressed for final legal opinion it will be decided that a "fair market value" is the rule that must be applied by assessors in valuing mill or other properties. Today such values, if determined by the results of liquidation sales will throw a heavy and possibly a crushing burden on home owners and general property holders not allied with corporations engaged in textile production.

In New Bedford, the mayor, assessing boards, and members of the manufacturers' association concluded to cease pressing suits each year with the understanding that a policy of retrenchment and lowered valuations would be instituted and followed, insofar as one set of office holders may bind successors who may be of the same or different political parties.

At present, there is considerable anxiety expressed lest the politicians may decide that court processes are only threats to force abatements and that current suits may be treated lightly. As a matter of fact, the possible decisions that may follow court appeals may result in recasting tax policies not only in a single community, but in all communities. Among themselves, manufacturers having strong local affiliations do not want to press municipal authorities too hard, but a new form of ownership is coming into industries and the personal element may be wiped out to be replaced by cold business demands of what is right and equitable regardless of the primary considerations that led to old systems and tolerances.

At best, mill taxation is a troublesome matter. Earnings oftentimes run largest in mills whose machinery may be very much older than mills showing no earnings, the difference being due to management rather than to equipment. At one time during the early part of the present decade the actual replacement of mill machinery had risen to three times the actual cost of mills built in the early part of the

Don't hold your nose

This tallow is odorless and uniform in color

IT may be hard to believe, we admit, until you actually see Federal Refined Beef Tallow "B" . . . but it is completely odorless . . . and uniformly white in color.

Federal Tallow "B" is a pure beef tallow refined by our own process. It is free of adulterants and we guarantee it to be uniform in color and titre at all times.

Textile mill operators who have seen this tallow say they can hardly believe their eyes . . . and nose! They heave a sigh of relief after using other tallows . . . all of which have odor and vary in color and titre.

For use in warp sizing with starches, etc., you can depend on this beef tallow for good results. It cannot be adequately described in an advertisement . . . you will have to see it.

We are glad to furnish trial barrel of Federal Refined Beef Tallow "B" on approval, with the service of our technical experts to demonstrate its proper use. No obligation. Write for further information.

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A buffered alkali, emulsifying and cleaning agent.

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A buffered alkali, colloidal in action, for use in dye bath.

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A water soluble rayon lubricant.

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A combined penetrant and softener.

FEDERAL SULPHONATED CASTOR OIL
Sold on guaranteed chemical analysis for your protection against dilution.

FEDERAL RETARDO
A powdered, purely vegetable material used in vat dyeing to replace glue.

FEDERAL SIZING WAX
A pure vegetable wax used in sizing warps. Has all the binding qualities of Japan wax but has a higher lubricating value.

Write for more complete information about these and other textile oils and chemicals, also our complete line of heavy and special chemicals, animal and vegetable oils and greases for the textile, tanning and paper industry.

FEDERAL PHOSPHORUS COMPANY

BIRMINGHAM — WORKS — ANNISTON, ALA. — ALABAMA

DIVISION OF THE SWANN CORPORATION

previous decade. For example, some mills cost an average of $20 a spindle, that could not be replaced at three times that amount 14 years later. Another curious fact is that there has been such a flood of second hand mill machinery in the markets that at times equipment in excellent shape has been available at slightly more than "junk value," and could not be removed easily as junk by regular dealers. Actually instances have occurred in this section where junk dealers would not take the machinery for the cost of removing it from the premises, yet the machinery was doing good service when the mill ceased operations.

For no specific reason given by any leading manufacturer in this section, it is now conceded that the worst of the depression in New England cotton mills has been passed. In some quarters encouragement has been preached because of labor difficulties and increasing costs in the South while in others it is urged that the better feeling that has been growing for the past few months is the normal result of improved opportunities to sell new lines at a moderate profit.

Pessimism is Modified.

It is evident on all sides that the great pessimism of a year ago has been modified. Last year, it will be recalled that the protracted New Bedford strike led to a national fusilade against New England textile mills, much of it cleverly directed by radicals who afterward devoted their attention to the South. But no real evidence is yet offered to indicate that there is any rush toward textile investment as some of the best mills paying dividends regularly are quoted below par. It is suiting the purposes of some of the promoters of mergers and other plans for reconstructing the industry to endeavor to recover some of the good will among investors that was lost a year ago in the wave of radicalism that swept some of the larger mill communities.

The Loring merger has closed its deal for the Aiken, S. C., properties and has started operations in the Arkwright mills bought in Fall River. It is also at work changing over the Chace mill plant for the manufacture of curtains. It has ceased to have sympathetic interest for Fall River manufacturers as many of them are now convinced that it is not going to play any very large part in restoring many idle properties into profitable activity. The plans talked of for some time by Jerome A. Newman, of New York, looking toward an amalgamation of 1,500,000 fine goods spindles are not taken seriously as yet as no definite proposition has been forthcoming and several mill treasurers reported to have favored his plans having stated that they see in them nothing of value to induce them to recommend their acceptance by stockholders.

Mergers Are Progressing.

The Berkshire Fine Spinning merger is proving successful and has already declared one dividend. It is expected that it may soon add another plant or two to its list and is reported to have been considering making offers to some Connecticut plants. The United States Finishing Company has split up its common stock and taken over a controlling interest in the Hartsville Print and Dye Works of Hartsville, S. C., and may take over some other plants that have been offered to it for operation. It is now known that the plan of bringing fine goods mills together under a service company chartered in Massachusetts to regulate sales and establish uniform costs will not be accepted very generally, although the matter is by no means abandoned.

The mills in Maine that are now owned by the Insull power interests, including the Bates of Lewiston, purchased last month, are reported as being on a paying basis and are being operated steadily. Previous to stopping two weeks for an annual vacation around Labor Day, the Amoskeag mills at Manchester were making considerable progress in discarding its old personnel and adopting new methods for handling a wide variety of merchandise. The Dwight company is beginning to operate the plant it bought at Great Falls, N. H., and the Merrimack at Lowell is making some additions to its plants there.

Rhode Island mills have been participating in curtailment plans in cooperation with the Cotton-Textile Institute. The fine goods industry of New England is averaging operations of about 70 per cent capacity. Fall River mills on fine goods, a million spindles or more are averaging about 80 per cent capacity.

Printers continue very active, although some of them have cut out all night operations. They have produced the greatest yardage of merchandise in the past seven months ever known in the history of the industry and most of them made money for the first half of the year. A great deal of curtain and drapery work is being done by New England mills and the larger plants making bedspreads are active.

Use of Cotton in the Aviation Industry.

Another important use of cotton in a fast developing phase of the aviation industry is announced by the Cotton Textile Institute, Inc., which states that the Standard Oil Co. of Ohio, has just placed orders for fabric style, with which to mark the roofs of their plants in 272 cities and towns in Ohio for the guidance of aviators. In the smaller towns, signs having letters 45 inches tall will be used, and in the larger cities, such as Cleveland, Cincinnati, Columbus, and Toledo, larger letters approximately 6 to 10 ft. tall will be used. These airway markers are made of heavy cotton impregnated with paint and treated with an adhesive which enables them to be fastened securely to a roof of a building. Among these advantages are the durability, visiability and ease of application. Cotton fabrics are used in a similar manner in street and highway markers, which consists of letters, arrows, and lines indicating traffic signs, directions and regulations.

Increased Production of Cotton Twine.

Annual production of cotton twine in the United States is estimated in excess of 43 million miles, according to an analysis of this branch of the industry just completed by the Cotton-Textile Institute, Inc.

Upward trend of production is reflected in statistics compiled by the Department of Commerce which show that the output of cotton twine in 1927 was 64.2 million pounds, an increase of 28.5 per cent over the production in 1925. The value of output in 1927 exceeded $20,000,000.

"Beauty in Fabrics Made of Bemberg."

A new pamphlet entitled "Beauty in Fabrics Made of Bemberg," stating briefly the outstanding characteristics of Bemberg yarn, will be available August 1st for distribution by store representatives and others interested in products made of Bemberg yarn.

Origin and Development of Bemberg Yarn.

The origin and development of Bemberg yarn was recently described by Mark Byron, Jr., of the American Bemberg Corporation, in an address on "Yarns of Chemical Origin." The lecture was also accompanied by a very interesting film "Rivaling the Silkworm's Genius." Bemberg hosiery was offered as prizes to the women who could select from six pairs of stockings those made of silk and those made of synthetic yarn.

The Cibacete Dyestuffs.

Ciba Company, Inc., announces that Sample Card No. 712 of the Society of Chemical Industry in Basle contains 20 type colorings in various shades and 24 combination colorings, colored with Cibacete Dyestuffs on acetate silk-satin. The steeping, bleaching and dyeing is minutely described, whereby attention is drawn to the fact that it is only necessary to stir the Cibacete powder brands into paste in water of 30 degrees Centrigrade and add the produced emulsion to the dye-bath. The Cibacetdiazo dyes are diazotized with nitrite and hydrochloric acid following the dyeing and are then developed with Beta oxynaphtoic acid.

In a fastness tabulation the light-wash-water and overdye fastness of the Cibacete dyestuffs is compiled, also the equalizing and reserving capabilities for cotton, wool and silk.

NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

Harold Smith, general solicitor of the Westinghouse Electric and Manufacturing Company, was recently elected vice-president. His office will be in the Westinghouse Building, 150 Broadway, New York City. Mr. Smith entered the legal department of the Westinghouse Company in 1919 and was appointed general solicitor in 1926.

Joseph D. Reiley of Foxborough, Philadelphia, recently accepted a position on the sales staff of the Steel Heddle Mfg. Co., of Philadelphia, Pa. and Greenville, S. C. He will operate in the Philadelphia district. Mr. Reiley, while comparatively a young man, has had wide experience in the textile industry and is well known to the trade.

John P. McCarty, who has been with the American Aniline & Extract Co., in the South, is to represent the same company in Maine, New Hampshire, Vermont and northern Massachusetts. He will be located in Boston. Among the products he is to demonstrate will be Orthocen, which has found a very wide range in both hosiery and cotton mills.

L. M. Bowes, who is well known in the dyestuff industry, has been appointed southern representative for Chemical & Dyehtuff Corp., with offices at 404 1-2 Cutter Bldg., Charlotte, N. C.

W. P. Bolen is now representing the Chemical & Dyestuff Corp. in Georgia, Alabama and part of Tennessee.

James C. Self, president of the Greenwood (S. C.) Cotton Mills and the Ninety-Six (S. C.) Cotton Mill, has returned from a very pleasant visit he recently made to several Western states. The states he visited included Arkansas and Oklahoma, where he investigated cotton production activities.

A. H. Robbins, vice-president and general manager of the Eureka Cotton Mill and the Springstein Mills, Chester, S. C., was in an auto wreck July 27, near Florence, S. C. His friend and companion, R. R. Hafner, a leading cotton planter of Chester County, was painfully injured, but Mr. Robbins escaped injury.

Nelson C. Poe, Jr., vice-president of the F. W. Poe Mfg. Co., Greenville, S. C., recently joined the ranks of the benedicts. He was recently married to Miss Florence C. Trussell, of Greenville.

James Oates has become superintendent of the Werthen-Morgan-Hamilton Bag Company, Nashville, Tenn. He was recently overseer of Carding at the Atlantic Cotton Mills, Macon, Ga.

Capt. Elliot White Springs, treasurer of the Fort Mill (S. C.) Mfg. Co., of which his father, Leroy Springs is president, is doing his bit to help aviation. He is having a large sign which reads: Fort Mill, S. C., painted on the roof of the spinning room of one of the mills. It serves as a guide in assisting aviators to locate their bearings. Captain Springs was a flying ace in the world war.

Joseph O. Coulbourn, recently assistant treasurer of the Lancaster (S. C.) Cotton Mills, has become associated with Williams & Travers, cotton brokers of Lancaster.

A. Van Schaif has arrived at his new quarters, Asheville, N. C., where he will assume charge of the technical work of the new American Enka Corp.

H. K. Roberts has been appointed superintendent of the Gordon Mills, Inc., Roaring River, N. C.

J. G. Holt is now superintendent of the Belmont (N. C.) plant of the Aberfoyle Mfg. Co.

A. M. Hamilton, former superintendent of the Chesnee (S. C.) Mills, has returned from a three-months' visit to England. Mr. Hamilton made his visit to England for the purpose of inspecting cotton mills and studying conditions in general.

Professor Chas. E. Mullin, of the Textile Chemistry, Rayon and Dyeing Division of Clemson College, has received the degree of Doctor of Science from the French Government, through the University of Nancy, France. Prof. Mullin has been engaged for some time in research upon the dyeing of rayon, cotton, and other fibers, as well as in the many applications of hydrogen ion (pH) control in the textile industry.

Professor A. R. Macormac, also connected with the textile department at Clemson, has spent the summer studying the textile industry and related subjects in New York, Philadelphia, and New England. He is giving special attention to the technical analysis of textile chemicals, microscopy, and laboratory work.

Paul F. Haddock, Southern manager for A. Klipstein & Co., Charlotte, N. C., and Chairman of the Bleachers, Dyers, Finishers and Mercerizing Division of the Southern Textile Association, was to sail from New York on the Olympic August 10th for a trip to United Kingdom and Europe, a trip which will terminate about the middle of September. Mr. Haddock is going away on a combined business and pleasure trip and while abroad will visit the plants of several large dyestuffs and chemical manufacturers.

J. Cheston Woodall, 524 James Bldg., Chattanooga, Tenn., has been appointed representative for the Hampton Company of East Hampton, Mass., manufacturers of mercerized yarns, gassed, bleached and dyed. Warehouse stock is being carried in Chattanooga and also at Clover, S. C. for the Carolina territory. Mr. Woodall formerly represented Cosby & Thomas, having been selling the southern mills for about four years.

J. R. Roberts, recently superintendent of Cora Cotton Mills, of King's Mountain, N. C., has resigned.

J. W. Cox is now assistant superintendent and cloth room overseer of the Anniston (Ala.) Mfg. Co.

J. D. Green was recently made assistant superintendent of the Oakleaf Mills, LaGrange, Ga.

I. K. Edwards has resigned his position at the Morrilton (Ark.) Cotton Mills, Inc., to accept a position in the office of the Anchor Duck Mills, Rome. Ga.

John Faulkner has resigned his position of overseer of night weaving at the Opp (Ala.) Cotton Mills.

D. F. Herring has been made head of the weaving department of the Samoset Mills, Talladega, Ala.

W. C. Morris, formerly second hand in the weaving department of Swift Mfg. Co., Columbus, Ga., has been promoted to overseer.

C. D. Hendrix, formerly of Greenville, S. C., has been made overseer of the cloth room of the Victory Mills, Fayetteville, N. C.

L. M. Pugh has become overseer of slashing and weaving at the Adams Duck Mills, Macon, Ga. He was formerly connected with the Alabama Mills Co., Clanton, Ala.

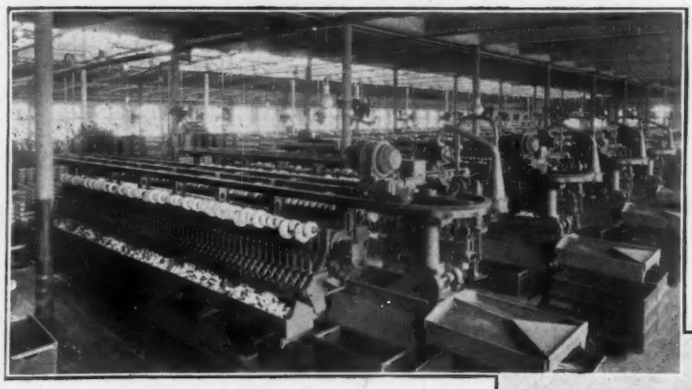
Carl Reames has resigned as second hand in night carding at the Watts Mills, Laurens, S. C.

M. L. Hanna has been made assistant designer at the Cascade Mills, Mooresville, N. C.

F. E. Shirley has been promoted to overseer of weaving at the Belton Cotton Mills, Belton, S. C.

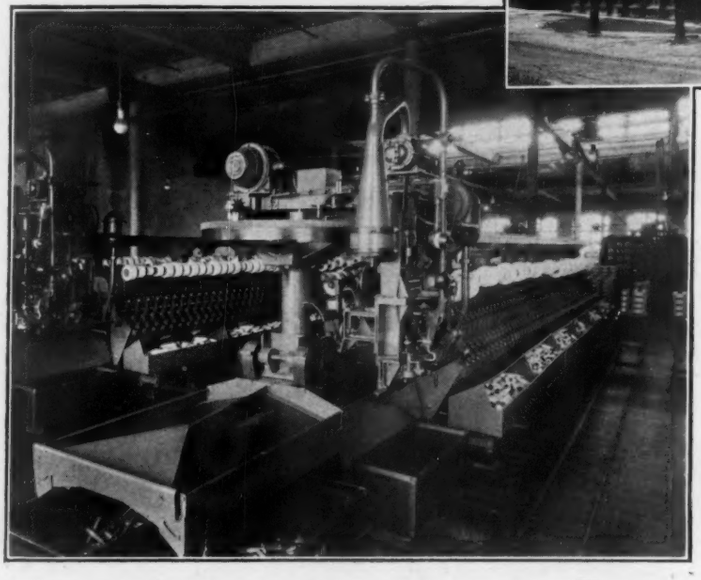
J. E. Moak has become overseer of carding at the Hillsboro Cotton Mills, Hillsboro, Texas.

"EVERY KNOT A WEAVER'S KNOT"



Another SATISFIED USER

of *Barber-Colman Equipment*



The ORR COTTON MILLS
Anderson, S. C.

AN EXCELLENT yardstick for measuring the quality of a product is the number and reputation of its Satisfied Users. The Orr Cotton Mills, pictured above, have been well pleased with the performance of their 4 Barber-Colman Automatic Spoolers and 3 High Speed Warpers. We have recently published a small booklet giving the names and locations of all our Spooler and Warper customers and the number of machines they have installed. We call it our "Users' List"—may we send you a copy?

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ROCKFORD, ILLINOIS

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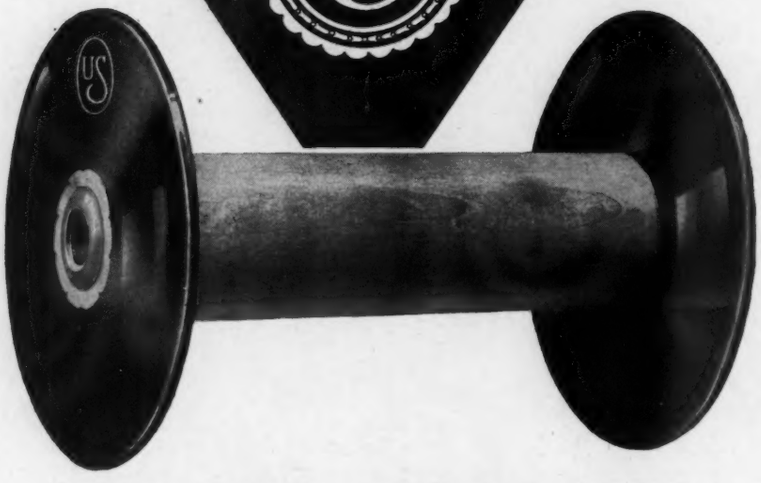
U S FIBRE HEAD SPOOLS

The Choice of Mill Men Who Know What's What



On the basis of dollar-for-dollar value U S Fibre Head Spools have made good. They put an end to frequent replacement expense and loss from split, slivered, and broken spools.

Heads of the best grade of vulcanized fibre are die-cut and anchored to the barrels with dogwood bushings.

All the words we might write can't show you the merits of U S Fibre Head Spools half as convincingly as these spools operating in your own mill.

Write, wire, or phone your order.

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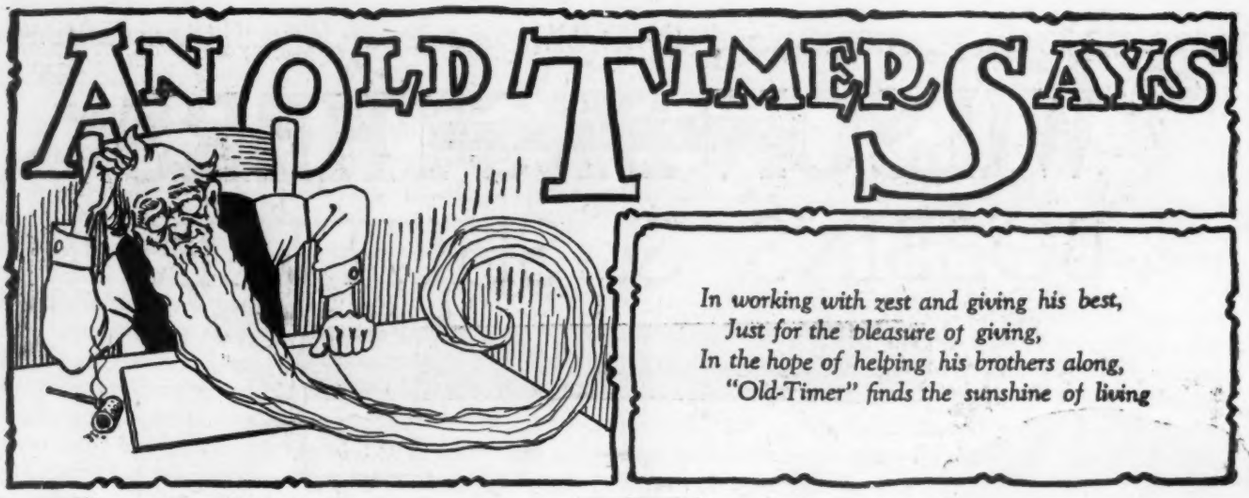

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brothers along,
"Old-Timer" finds the sunshine of living

"What Do YOU See *in the* Mirror?"

If you are standing still, you are going backward.

Hey! Wait a minute! How's that?

I say if you are standing still you are going backward.

Aw go on! Cut out the riddle stuff or cross-word puzzle or whatever you are trying to put over, and let's talk just plain United States.

Well, if you just stop for a moment and study that sentence you will see it is very simple, and just plain United States as you call it.

But you contradict yourself—Any reasonable person knows you can't be actually going backwards if you are standing perfectly still.

Oh! I see you did not quite catch my slant. I am referring to brains instead of your feet, and your brains represent your job—your success—your financial standing—your social standing—your happiness—in fact your whole personality, and when you let that brain stop in any of the above mentioned functions—the result is then equivalent to going backward.

I still don't quite get you.

No, because you did not let me finish—the point I am trying to bring out is that we are living in such a fast age that if a man is not applying himself to a comprehensive line of study in the line of work he is in—then he is going backward because his competitors are forging ahead so fast—

Did you ever notice while sitting in a standing train that if another train comes along on the adjacent track, going in the same direction you are going, you have to look twice before you can realize that you are not moving in the opposite direction.

That, my boy, is what that brain of yours is actually doing if you let it stop—it is then going in the opposite direction—it is going backward so far as you are personally concerned.

Well, if I am standing still—going backward—standing on my head or something—tell me how in heck I am going to get up steam and get started?

Simple enough: First, begin to *study* what you read—have a note book always at your convenience, and while reading, every good point you see, stop and make a note of it. Oftentimes you are reading something which does not even pertain to your special line of business or work, and you get an idea from that reading that does remind you of something about your work, but you simply read on and the thought is lost—

Let me suggest that as you are a mill man, naturally you are interested first in reading something that will apply directly to your work.

Then you should get your files of COTTON for the past several years and see if you can't honestly try to get your dollar's worth out of those copies.

Do you realize that you have been paying $1.00 a year for something that, speaking only conservatively, should be worth a thousand dollars to you?

I mean just exactly that, and I am willing to gamble with you on it.

If you will apply yourself honestly—if you will actually *study* the issues of COTTON and at the end of one year you do not believe you have been benefited more than a thousand dollars—then OLD TIMER will prove to you that you have not been honest with yourself, because he can cite you to many, many actual experiences of men who have benefited several thousand dollars by reading the OLD TIMER articles alone, and that is only one of the many valuable features which have appeared in COTTON in the past eight years.

Most of these regular readers know that the OLD TIMER articles have always been based on actual practical experiences—he has several times frankly admitted to his readers that he does not claim to be a

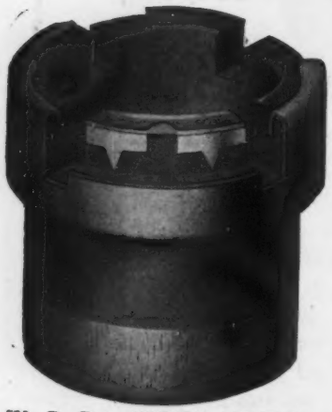
WHEN OLD TIMER submitted this article, he expressed the thought that some, in reading it, might feel that he is "patting himself on the back." However, we believe that his readers know he always speaks sincerely—in an effort to help and inspire—and that you won't feel that way about it.

And, quite naturally, we agree with him fully in everything he says in this article.

EDITOR COTTON.

WILSON BROTHERS BOBBIN Co LTD

BOBBINS & SHUTTLES



W. B. Pat. "GRIP" SHIELD.
Absolutely Secure.

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RING BOBBINS,
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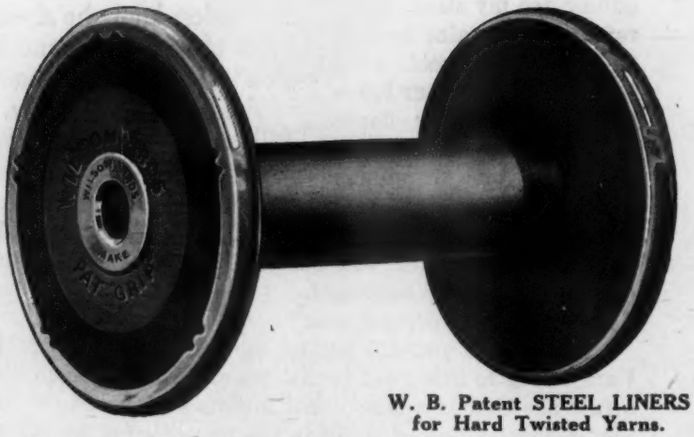

W. B. Patent STEEL LINERS
for Hard Twisted Yarns.

Largest Makers in the World.

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Telegrams: "NUGGET, LIVERPOOL."
Codes: A B C, A1, & Marconi.

GARSTON,

LIVERPOOL.

—Agents **LEIGH & BUTLER,** *Boston, Mass., U. S. A.*

"Ideas are the foundation of all progress. Any man who is not progressive enough to find new remedies, must expect new evils."

professional writer—he is a cotton mill man just like you are and gets a lot of pleasure out of passing his experiences along to his brother overseers and superintendents who will profit by them.

If you will get out your back numbers of COTTON and actually study them you will begin to realize that every phase of cotton mill work has been progressively taken up—not only each department in its consecutive order but practically every phase of human nature disguised in readable form from the high sounding "psychology" to just plain horse sense.

Many of the articles have taken as much as two months' preparation, and they all are based on facts; not fiction.

All of the foregoing has been said with no other thought in mind than to simply put the cards on the table in an effort to convince you that you should read constructively and you should start a line of definite study to improve your mind.

It matters not what your age is, your mind is still flexible—it can stil take on more knowledge—there is no danger of overworking your mind—men do not break down from overworked minds as many people think, but a nervous breakdown is usually caused from worry.

Clip This Out!

"THE successful overseer or superintendent today is the man who can build up the best organization; the man who can get other people to successfully carry out his orders; the man who can obtain the most loyalty. To accomplish these things, that man must first be a square shooter; he must not let little prejudices influence him in his relations with other men; he must be a man of his word in order to win confidence."

Ideas are the foundation of all progress. Any man who is not progressive enough to find new *remedies* must expect new *evils*.

Time will certainly change things for the worse if you do not apply wisdom to alter them for the better.

Time, which is life, is like a one-way street. You are not coming back, brother, and a lot of us who are traveling that one-way street are going in the wrong direction.

OLD TIMER has always contended that research is the foundation of all progress—it matters not whether it is in the auto industry—radio—telegraph—rail roads—air ships—cotton mills or your own *personal self*.

So far as the individual is concerned your personal self is the most important thing to you.

"Do you know yourself?"

Can you realize that Old Man Opportunity is banging at your door every day?

The law of supply and demand governs the price of almost everything, including *your services*.

You pay an oiler or roving man or filling roller less than you do a weaver or frame hand—and there are more roving and filling men wanting jobs than experienced machine operators, aren't there?

This same reasoning explains why there are so many more jobs paying $5.00 per day than there are jobs paying $10.00—these figures may be changed to $3,000 a year and $5,000 a year, and so up the ladder. The only way to get out of one class and into the other is to climb a rung or two above the crowd. And *Knowledge* is the one big thing that will enable you to do it.

The successful overseer or superintendent today is the man who can build up the best organization—the man who can get other people to successfully carry out his orders (ideas)—the man who can obtain the most loyalty. To accomplish these things that man must first be a square shooter—he must not let little prejudices influence him in his relations with other men—he must be a man of his word in order to win confidence.

Your job is no longer a one-man job—you can't do all the work—therefore, it is your management relations with other men which spells success or failure in your line of work.

Now I have rambled around considerably in this conversation, but all which has been said was with the intention of getting you to realize that "Knowledge is Power' 'and that Knowledge is something that every man may have who has the backbone to go after it.

Knowledge is essential to the realization of your ambitions. There are two principal ways of securing knowledge. One is to drift along, picking it up here and there from contact with capable men and just taking what will naturally soak in. The other way is to follow a systematic course of reading and study.

Are you ready to start?

A Special Word to the Readers of the "Old-Timer" Page

Dear Friends:

I want to take this occasion to express my especial appreciation for the numbers of letters being received each month from the readers of my department in COTTON.

Many of these have come in direct response to my different requests for answers to various problems, while others submit practical questions pertaining to the mill. I appreciate all of them, but, since I have a job to run, it is impossible for me to answer every one personally; however, I read them all carefully and enjoy them, and shall be glad to hear from any of you at any time.

Sincerely yours,

OLD-TIMER.

Develop Technique

Just as much depends upon it in Business as in Art or Sport

Technique in Business is that skilled and refined procedure which harmonizes mind with method and motion. Business that has it—individuals that have it—accomplish more, and do better work with less effort, less time and less waste.

Not long ago Business shied at the use of a term, or a practice, which had anything to do with Art—or even Sport. Not so now.

Modern Accountancy has shown not only that Modern Business *is an art,* but that its great advance is due to its recognition, and its application, of exactly the same factors and methods which have produced great Art—and made Sport so universal and so interesting.

In the control of your business—in the method or system of your management—in the endless operations of all material functions—*develop technique.*

ERNST & ERNST

ACCOUNTANTS AND AUDITORS—SYSTEM SERVICE

NEW YORK	RICHMOND	DETROIT	CLEVELAND	CINCINNATI	CHICAGO	INDIANAPOLIS	ST. LOUIS
PHILADELPHIA	WINSTON-SALEM	GRAND RAPIDS	AKRON	DAYTON	MILWAUKEE	DENVER	KANSAS CITY
BOSTON	BUFFALO	KALAMAZOO	CANTON	LOUISVILLE	MINNEAPOLIS	DALLAS	OMAHA
PORTLAND	ROCHESTER	ATLANTA	COLUMBUS	HUNTINGTON	ST. PAUL	FORT WORTH	MEMPHIS
PROVIDENCE	PITTSBURGH	MIAMI	YOUNGSTOWN	NEW ORLEANS	DAVENPORT	HOUSTON	SAN FRANCISCO
BALTIMORE	WHEELING	TAMPA	TOLEDO	JACKSON	FORT WAYNE	SAN ANTONIO	LOS ANGELES
WASHINGTON	ERIE					WACO	SEATTLE

THE BENEFITS OF MURRAY-HANCOCK GINNING

Relative quantities of staple recovered by various processes of ginning.

By ginning only

71% 74% 74%

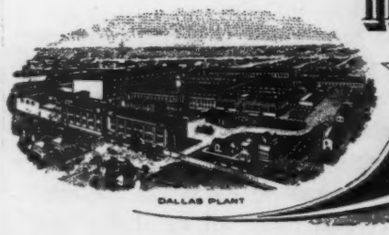
By ginning with MURRAY-HANCOCK process.

78% 80% 77%

377 RPM 696 RPM 865 RPM

Relative percents of **total waste** of all kinds made by each process, from opening to carding, in the cotton mill:

.15% waste Opener | .54% waste 1st Picker | .16% waste 2nd Picker | 4.74% waste Card



The MURRAY COMPANY MANUFACTURERS

COTTON GINNING AND COTTON SEED OIL MILL MACHINERY

DALLAS, TEXAS MEMPHIS, TENN. ATLANTA, GEORGIA

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

Attention! "Wash" is Back with Us.

EDITOR COTTON:

The writer was greatly interested in the discussion at the Henderson meeting of the Eastern Division of the Southern Textile Association, reported on page 877 of the June number of COTTON.

The subject of improving the breaking strength of yarn has been and always will prove interesting to all mill men.

In regard to oil spraying, I settled that question in my mind many years ago.

If Mr. George F. Brietz, superintendent, Selma Cotton Mills, Selma, N. C., should ask the writer, "If you were going to build a new mill would you use oiled cotton?" my answer would be, "No."

Continuing with the report, we find that Mr. Brown makes an attempt to answer the question, but admits that there was no difference in the breaking strength of the yarn.

There is no question about oil spraying reducing the amount of dust and fly in any card room—upon that point there can be no argument. However, one should remember the law of compensation, you pay for what you do.

The writer, for one, would like to ask Mr. Brown where the dust and fly go. Dust and fly are found in all raw cotton, and, if oil is used to hold the foreign matter, surely it is carried to the finished yarn. The principle of the card is to clean the stock. Therefore, no oil is needed to put down the dust and fly. If the front knife plate is set as closely as possible, there will be very little or no stripping. It is the same with the back of any cotton card. If one understands his business he can arrange this so there will be little or no fly.

The ring spinner should be the judge, for, when oil is used, he is the one who must experience the difficulty of handling the yarn that contains an excess of foreign matter.

At this point, I would like to have the readers of this department picture in their minds the long draft spinning system, or the draft rod spinning system combined with the oil spraying system.

The principle of the cotton card is to remove the fly and dirt from the sheet of lap. Therefore, why should it be necessary to plaster the fibers to retain what the principle of the card is supposed to remove?

Mr. Brown stated that oiled stock gave more waste in the picker room. When we remember how careful our forefathers were in opening the bales five or six days before mixing, we are not amazed at this statement.

We invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

Of course, there is no doubt that the tests made by Mr. Brown are facts.

Remember when oil spraying first appeared on the market? The claims made at that time covered every remedy for defects in the cotton thread, but like the long drafting of spinning, the claims reduce with the years of use.

You will notice that little or nothing is said about the appearance of the finished yarn. Is it possible that the finished yarn from oiled stock appears as clean as from the plain stock?

Mr. C. S. Tatum, of Raleigh, N. C., to my mind has great judgment when he states:

"I have made lots of experiments along this line to determine what would improve breaking strength, and I have never found anything that would improve breaking strength as much as carefully selected cotton. I know that everyone here will agree with me because I doubt if there is a one of us who is responsible for the buying of the cotton, and we all like to lay our troubles on the cotton. But it is of extreme importance, and has been neglected. I think that in many cases the selection of our cotton is in the hands of men who are not qualified to judge it from the standpoint of spinning value. They can tell whether it is white or blue, or leafy or clean, but they know nothing of the spinning value. I claim to be one of those rare specimens who know something about the spinning value of cotton, and I have picked cotton out of a warehouse for this purpose and it was easy for me to make 8 to 10 pounds improvement in the breaking strength by taking the right kind of cotton. That is why I say it is the most important thing as to breaking strength."

I have quoted Mr. Tatum word for word in this paragraph, and I think it is worthy of many readings.

Now the question is, what constitutes a man qualified to buy cotton for a cotton mill? I would suggest that he be familiar with the following:

(1) He must know that the grade does not indicate the length of the staple, but the variety usually does.

(2) He should know that the presence of unripe

fiber also lowers the grade in cotton. The unripe fiber is very weak and has very few, if any, convolutions, but is solid, smooth and cylindrical, and may be recognized by its glossy appearance.

(3) Another very important factor in determining the grade of a cotton is its freedom from foreign impurities, such as leaf, boll, husk, stalk, seed and sand. These impurities are present to some extent in all cotton, but the amount depends largely upon the care with which the cotton has been gathered. The higher the per cent of waste in the sample of cotton, the lower the grade. The average per cent of waste in the various grades, assuming all other qualities to be the same, is approximately as follows:

Strict Good Middling, 11.5 per cent; Good Middling, 12 per cent; Strict Middling, 12.5 per cent; Middling, 13 per cent; Strict Low Middling, 14 per cent; Low Middling, 15 per cent; Strict Good Ordinary, 16 per cent; Good Ordinary, 18 per cent; Ordinary, 19 per cent.

The difference in the value of these grades is usually greater to the spinner than these figures would indicate, since the staple of the lower grades is very often weaker and of a darker color than the higher grades.

(4) The color of a sample affects the grade as much as does any other one factor. Buyers should not be fooled when judging the stock by the color and amount of foreign substance.

(5) Creamy colored cotton will make the strongest yarn, and from tests made by the writer, the average tensile strength of the fibers was found to be 110 grains. While on the other hand fibers of the same variety and of the same diameter, but perfectly white, was tested and the average strength of fiber was found to be 106 grains.

What is stated in the fifth classification is what Mr. Tatum had in mind when he spoke of his experiment. Therefore, if the tensile strength of the cotton fiber will vary from three to four grains, it is obvious that Mr. Tatum was right in his claim that he has and can pick cotton to vary the breaking strength of the yarn from 8 to 10 pounds.

I am willing to give Mr. Tatum a great amount of credit in judging stock, but I think he has much to learn in the settings at the back of the card. Mr. Tatum claims that some people set the feed plate too close. His rule is to set it as far back as possible without getting a cloudy web and setting to a 17/1000 of an inch gauge.

I would like to know the advantage, if any, for such a setting. With such a setting it must be admitted that the card clothing has no protection and any large lumps will damage the fine wire on the card.

Remove the flats from any card, I care not how long it has been running, and you will find the surface of the cylinder blistered here and there and the clothing loose in spots, to such an extent sometimes, that the cylinder wires will dip into the flat wires and cause a streak.

The mote knives are no protection, for they will bend very easily. Anyway, is it not a fact that mote knives are broken by heavy tufts of cotton? In such a case what happens to the card clothing? There is no danger of injury to the cotton fibers by setting the feed plate as close as possible. In so doing you protect the card as stated, and you get a gradual feed that makes an even and beautiful web.

WASH (R. I.)

"De-Humidifying a Picker Room."

EDITOR COTTON:

In your April issue, "CONTRIBUTOR No. 4136" presented a most interesting article on "de-humidifying" a picker room—so important a subject that it merits further discussion.

Your contributor evidently appreciates the primary importance of securing uniform dry weight of cotton in the finisher lap, and I cannot too strongly support his opinion in that respect. Even in a mill where ample humidifying capacity is combined with automatic regulation in all departments subsequent to picking, there remains one important variable condition which is bound to cause variation in sliver, yarn weight and count if the finisher picker laps are permitted to enter the card room with a variable dry weight of cotton per yard. This is a fact which has been proved over and over again, and it has been demonstrated in actual practice that when proper steps are taken to stabilize the dry weight of the finisher picker lap, corresponding uniformity in sliver and yarn weight and count will result, practically eliminating the changing of gears—provided humidity is under control—with consequent improvement in breaking strength and uniformity of yarn.

Perhaps it is natural to conclude that the logical answer lies in securing a uniform total weight of lap coupled with uniform regain in the lap, but the means required to make this method successful are expensive. I therefore propose to outline my reasons for believing that there are simpler and less expensive means for arriving at the desired result.

The ideal method for producing constant regain in the lap would be that which insures constant humidity under all weather conditions at a level sufficiently low so that the regain of the cotton in the lap would be moderate, leaving the fiber sufficiently dry to permit the ready separation of short staple, leaf, dirt and impurities. It would also be desirable to maintain the temperature at reasonably low levels in hot humid weather. That combined effect of temperature and humidity, which humidifying engineers call the "effective temperature," would then impose no intolerably oppressive conditions upon the picker room help, and, with favorable processing assured, the results would be ideal.

This condition could be produced by relying upon a central station conditioning apparatus of ample capacity coupled with liberal refrigerating capacity for the condensation and removal of excessive atmospheric moisture in hot, humid weather. It is believed, however, that the expense of installing and operating an equipment of this type would be generally considered prohibitive.

A second alternative would be an automatically controlled humidifying system coupled with a sufficient amount of heating radiation—also under auto-

matic regulation by the humidity controllers. We should then be able to produce the desired level of humidity in dry weather, when atmospheric moisture was deficient, and also to hold the humidity down to the desired level in humid weather, when atmospheric moisture was excessive, by the expedient of automatically raising the temperature. Control of humidity and regain in the lap would thus be assured but only at the expense of oppressively high temperatures in hot humid weather.

The cost of installing and operating such an equipment—not overlooking the cost of heating in humid weather which would be an additional operating cost —would also be too high to be ignored and in my honest opinion would be excessive, though perhaps not prohibitive.

As a third alternative we may use a humidifying system with moderate capacity sufficient only for producing a humidity of, say 55 per cent with automatic control under all weather conditions when atmospheric moisture is insufficient. When humid weather prevails the automatic regulation will shut off the humidifying system altogether but we may then fall back upon control of lap weight by supervision, using a method which, as pointed out above, is already widely used. By adjusting the total weight of the picker room lap to correspond with observations of the humidity, the weight of the finisher lap may be varied by adjustment according to fixed tables so that the dry weight of cotton in the lap, either as a whole or per yard, may be held constant.

It is true that this third alternative requires close but not unreasonable supervision. Humidity must be observed with a reliable instrument at sufficiently frequent intervals, and the evener mechanism on the finisher picker must be changed to produce the indicated lap weight known to correspond to the observed humidity. Experience has shown, however, that with reasonably intelligent help, using suitable indicating and recording instruments and simple auxiliary devices—such for instance as specially prepared dials for the weighing scale—it becomes perfectly feasible to practice this method with complete success.

After carefully following the development of humidifying practice in picker rooms for several years past, the writer has been compelled to revise his original opinion—that humidification in picker rooms would not yield a fair return upon the necessary investment and cost of operation—because of the success which has attended the use of automatically controlled humidifiers coupled with lap weight regulation in several mills where this method, after careful trial, has been adopted.

It should be pointed out here that there is no necessity for producing as high a regain in the lap as will be subsequently attained in the card room. *The all-important object is uniform dry weight per yard in the lap fed to the card.* If the card room and subsequent departments are humidified with automatic control the fiber — fed slowly as it is to the card and thoroughly aerated as it is during the process of carding—will quickly attain hygroscopic equilibrium with the card room atmosphere. If the card room atmos-

Sulphonated Castor Oil

E. F. Drew & Co., Inc.
15 EAST 26TH STREET
New York, N. Y.

BOSTON, PHILADELPHIA, CHICAGO
ATLANTA, CHARLOTTE, N. C.

phere, including the drawing, combing and roving processes, is held at constant levels of humidity, regain will remain substantially constant during each process. Gear changes are thus reduced to the absolute minimum and the spinning room is supplied with roving of absolute uniformity which, without doubt, is one of the most important targets at which to shoot.

Before closing I wish to point out that the proper use of refrigerating equipment in a central station plant would not produce condensation or precipitation in the picker room atmosphere, as might be erroneously inferred from the previous discussion. Condensation, which must of course occur in extracting excess moisture from a humid atmosphere, would take place in the "de-humidifier" when the air passing through the "de-humidifier" contacts with the refrigerated spray. The air issuing from the "dehumidifier" would be saturated at the temperature of the spray water, and when leaving the outlets in the delivery duct would mix with the warmer air of the room, immediately rising to higher temperatures and changing to the lower relative humidity for which the automatic controllers would be adjusted.

While agreeing as to the desirability of "de-humidifying" picker rooms in humid weather, which was advocated during the discussion quoted by your contributor, the writer maintains that from a practical standpoint it is easier and less expensive to compensate for high humidity by increasing the total lap weight, and so compensate for the excessive regain in the lap and thus keep its dry weight constant. It is believed that any practical manufacturer who will investigate the possibilities of regulated compensation of lap weight to humidity will become convinced that the method is worthy of a thorough trial.

THIRSTY COTTON.

Drawing-In Three Harness Work.

EDITOR COTTON:

In a recent issue of COTTON, "CONTRIBUTOR NO. 2377" asked for a method of drawing-in, drawing the selvage in the same harness as the body of the cloth on a three-harness twill or a three-harness drill, in order to make a good looking selvage.

Since he did not indicate that he desired a tape selvage, I am assuming that he has in mind a plain selvage. This being the case, a satisfactory method is to draw the selvage, 1, 2, 3, the same as for the body of the cloth. Use 36 extra ends for making the selvage, and draw these in two in each harness eye, and six in a dent in the reed. This will mean using 18 ends in the selvage on each side of the cloth, which will mean three repeats, 1, 2, 3, using two ends in each harness eye.

Then in drawing the body of the cloth, the best method is to draw this 1, 2, 3, as was the case with the selvage.

By referring to Fig. 1, *A* shows the ribbed effect produced by a drawing-in of this nature on a three-harness drill, while *B* shows the draw for both the selvage and the body of the warp.

"CONTRIBUTOR NO. 2377" also asked for the best method of making a warp flush twill and a filling flush twill, inferring that he thought this to be done by use of the cams. I would say that this is done by the pick of the cloth rather than with the cams. On an ordinary construction of drill or twill, using up to about 70 picks per inch will produce a warp flush twill, and I will say above this number will give a filling flush twill. This of course applies only to the standard constructions of cloth, as there are some cases in special constructions where the reverse might be true.

The question of how to make a right-hand twill and how to make a left-hand twill, was also asked. I am presuming that as in case of the other questions, "CONTRIBUTOR NO. 2377" refers to a three-harness drill or twill. On three-harness work, if you are going to make a left-hand twill, time the two back harnesses level with the shuttle in the left-hand box. On the same work, if you are going to make a right-hand twill, time the two back harnesses level with the shuttle in the right-hand box.

CONTRIBUTOR NO. 4589.

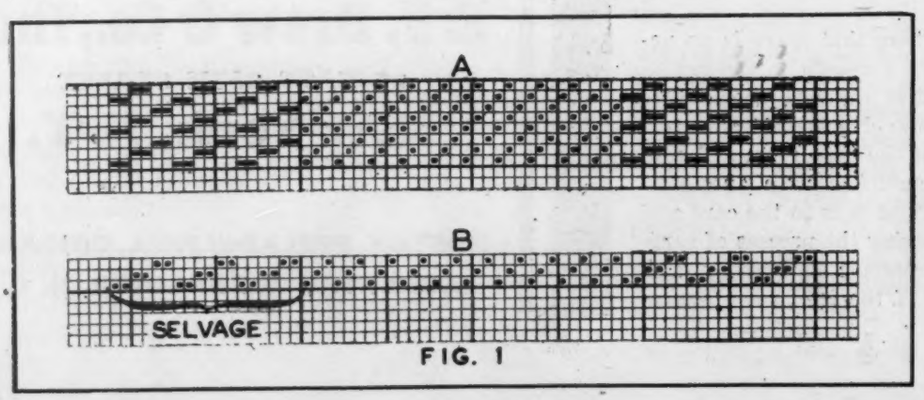


FIG. 1

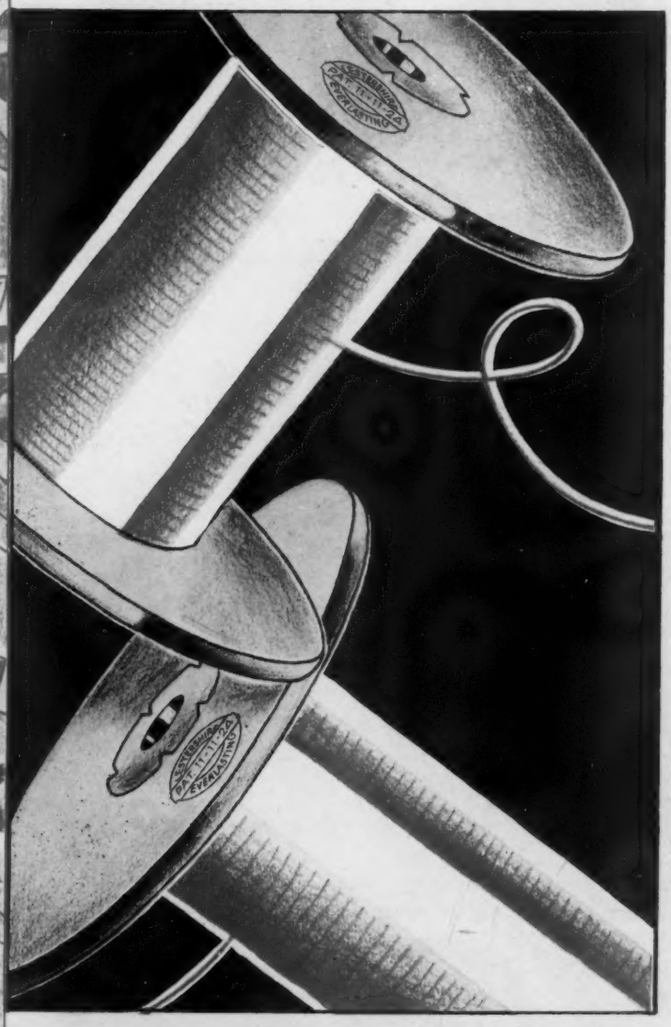
Another Man Answers Old-Timer.

EDITOR COTTON:

It has been some time since I have written anything for the discussion department of your magazine, but I do want to comment upon "OLD TIMER'S" articles. I would first like to tell you what I think about his article in the April issue on the subject of "Would You Hire Yourself for Your Job?" This surely does hit the nail on the head, and I think if all of us younger fellows would study this out as we should, we would perhaps understand why we do not get promoted any faster. Just because we want the better job is no reason for our having any claim on it, and I suppose even the sweeper would like to have a better job too. What we should do is to take "OLD TIMER'S" letters and apply them to our own job. I have pasted up that seven-word sentence, "Would You Hire Yourself for Your Job?" where I can see it several times every day, and also the one he wrote about "Two-Thirds of Promotion is Motion."

LESTERSHIRE SPOOLS

Help to Prevent Trouble at the LOOM



EVERY process leading up to the loom must be closely watched, for every factor has a bearing on finished production. In spooling, the nearer perfect the spools, the less liability that trouble may develop later at the loom.

It starts with the winding of the yarn. On an untrue spool overlapping occurs at the ends of the spools. When the yarn is unwound, undue tension stretches the yarn at these places, even to the breaking point. That means trouble at the loom.

The remedy is to use Lestershire Fibre Spools. They are remarkable in their trueness of surface. The yarn winds on evenly, and unwinds at just the right tension. Users of Lestershires know efficiency in spooling.

SATISFACTION GUARANTEED

LESTERSHIRE SPOOL MFG. CO.

146 Baldwin St.
Johnson City
New York

Southern Office
519 Johnston Building
Charlotte, N. C.

WILL A POUND OR TWO MAKE ANY DIFFERENCE ...?

WHEN a prize-fighter fails to make the weight limit for his class, he's disqualified. He can enter the class above, to be sure, but that's likely to prove disastrous.

When a quantity of your material goes into production weighing more or less than it should, the results are equally unfortunate. It's neither in one class nor another. *It can't do its job properly.*

So many successive operations in textile mills today are controlled by weight, that the importance of strictly *accurate* weight can hardly be over-emphasized. Narrower margins of profit are fast forcing old-fashioned inaccurate scales out of the picture.

TOLEDO HANGING SCALE *equipped with divided pan of cast aluminum for weighing cotton laps. Capacities, 50, 100, and 150 lbs. Dial 14" in diameter. Equipped with knife-edge indicator.*

The Toledo principle of weighing by gravity has removed all guesswork and solved the problem of careless or incompetent labor. There's no juggling of weights with a Toledo Scale. Mental calculations are reduced to the minimum. Simply load it and read it — and repeat — as fast as you like.

One of the special scales Toledo has developed for textile mills is shown here. There are many other types, covering all weighing operations from the receiving room to the shipping room.

Many mills have found it profitable to discuss their weighing problems with a Toledo man. See coupon.

TOLEDO SCALES

NO SPRINGS - HONEST WEIGHT

Toledo Scale Company, Toledo, Ohio. Canadian Toledo Scale Company, Ltd., Windsor, Ontario. Sales and Service Headquarters in 181 cities in the United States and Canada, and in more than 50 foreign countries.

TOLEDO SCALE COMPANY, Toledo, Ohio C-8

Please have the Toledo man see us about our weighing problems, with no obligation to us.

Name _____

Address _____

_____

I think every section man, for example, who is really interested in his job—and he surely ought to be—should have that tacked up in the lid of his tool box. I think such things as these would do a whole lot more good than some of the pictures I have seen tacked up in some tool boxes—that is, if these slogans were really applied to the job.

Now, "OLD TIMER" had another idea about "Do You Know Yourself?" Did you ever see an overseer stand up and tell another overseer just exactly what kind of a fellow some poor man was who had it tough, and was down and out, so to speak? Well, nine times out of ten, that same overseer could not have given a good description of himself, because he did not know himself. Oh, he might have been able to tell what he thought about himself, but what I am talking about is knowing ourselves through and through.

We fellows should study ourselves so we can find out what in us needs improving, or what we should be ashamed of. We should think less about the faults of our fellow men, and certainly should not gossip about them. Did you ever meet up with a fellow who was always whining about having to have a "pull" to get anywhere these days? Well, there might be something in this, but before a man can get pulled anywhere he has got to do a lot of pushing, and if he is not willing to push, he need not look for any pull.

F. M. B. (S. C.)

Some of the Carder's Troubles.

EDITOR COTTON:

Easing over the bumps is all right for the man who is driving an automobile, but the bumps one runs into in the textile industry today cannot be eased over. They must be hit full speed, for there are too many of them on the textile road, and if one tries to ease over them he will get so far behind that he will never catch up.

Take the poor devil in the card room. He is given a lot of dirty Texas cotton to run and he has to card over 200 pounds per card to keep up, with the management raising cain all the time about specks in the cloth—it must be made cleaner—and when he comes back at them about his cards they tell him that they appreciate that all right, but, it *must* be made cleaner. A thing like this ceases to be a bump; it becomes a mountain.

Going on down to the drawing room. He hasn't enough to keep up without speeding them to death and making the sliver too heavy. In other words, he has to speed up too high and run everything he has onto heavier numbers in order to keep the spinning running, and then the boss spinner comes around growling about uneven numbers. Then you have another bump to get over, and you can't ease over *it* either.

However, it takes things like these to put a man on his mettle. It makes a better overseer out of him. It gives him something to fight all the time and keeps him from growing stale, and sooner or later, the management will see things in their true light and they will give him what machinery he needs to make good clean and even work. He will then feel better by knowing that he has put up a good fight, and victory will be much sweeter.

The things that a man really needs to improve his job, as a general rule, are the things that the management will not buy. That is where the good overseer comes in. Take the wide-awake overseer; he is hard to please; he is always asking for something to improve his job, and a man like this is worth having on the job, for he will keep his job in good shape all the time.

But there is another type of overseer, the kind who is always satisfied, and never wants anything. This type is no good, and sooner or later the management will run him off on account of the condition in which he has let things get, and Heaven pity his successor!

To get the things that are right, you will have to fight, but the things that are wrong, you can get for a song.

J. T. D. (MISS.)

Get Out of the Big Alleys!

EDITOR COTTON:

To be a good overseer, one must be a keen observer; must be able to observe the things which the help fail to see, and to do this, must get out of the big alleys.

There are too many overseers in the mills of today who try to see their whole job from the big alleys, and it simply can't be done.

The writer remembers the case of an overseer of weaving who had part of his looms in one room and part of them in another. One room was called the old mill and the other one was called the new mill. At this particular time, the weaving was running mighty bad and the superintendent came in one evening and, without the knowledge of the overseer, he checked the stopped looms in both rooms, and according to his figures, the percentage of stops was greater in the new mill than in the old mill at the time he went through, and after going back to his office he had this overseer to come out and asked him how everything was running, and he was told by this fellow that it was running fine—Falsehood No. 1—and then he was asked which room was running best, and he was told that it was the new mill, which, according to the superintendent's figures was Falsehood No. 2. Now the reason this fellow was caught that way was because he was not observing. He was one of these big-alley overseers who go up and down the big alley, looking wise, and about the only thing this fellow could observe was the clock and the pay-master. He could not observe his boss when he was going through his room checking up the stopped looms.

The writer once had a job at a well known mill in Georgia, and at this place they had an overseer of carding, and this overseer had only one eye, but he could see more with that one eye than a lot of fellows can see with two. Now it was the writer's duty every Friday to clean down the top of the house, but it seemed that he could never please this one-eyed fellow, who would always find some fault. But one Friday he resolved to please this fellow, so he took his long-handled broom and gave the ceiling a good brushing down, and the places he could not clean with the

broom he took the ladder and went up and wiped it with a rag; in fact, he put forth so much effort that the help all noticed it. Finally it was finished. Then along came that one-eyed overseer, and when he got to the writer, who was feeling pretty big over the job he had done, he stopped and asked him when he was going to clean the top of the house.

Now it'll never get much hotter than the writer was then, but he held himself together and asked what was the matter with the top of the house. The overseer answered by taking the writer over close to the elevator shaft, and pointing up to one of the sprinkler pipes on which hung two or three little tags of cotton.

That is what one would call an observing overseer and one that is worth having on the job, and, by the way, this fellow is still on the job, and the prospects are good that he will stay on the job as long as that other eye holds out, and the writer truly hopes that it will hold out, for fellows like that are needed in the mills; fellows who can see things and do things and are not afraid to get out of the big alleys; are not afraid to get into the working alleys among the machinery; not afraid to get a little black oil on their nice white shirts and are not afraid to talk to the help and train them as to what to do and what not to do and not afraid to tell the truth.

In conclusion, I would repeat that a good observer makes a good overseer.

J. T. D. (MISS.)

Organizations for 50s, 60s, and 70s.

EDITOR COTTON:

While visiting a friend at his mill the other day, the question as to the best lay-out for 50s, 60s, and 70s warp yarn was brought up. I gave him the data on what I consider very good lay-outs for these yarns. He finally admitted that he liked the looks of them, and to show his appreciation, he put the data I had submitted to him in chart form, which appealed to me very much, as it was entirely new to me and looked very helpful.

We then agreed that as we had received so many helpful hints from COTTON, it would be the least we could do to try and contribute a little. So we combined out efforts.

Figure 1 shows a lay-out that I have been using for 50s and 60s warp yarn, which I have found to be very satisfactory. In this lay-out I am using 1-3/16-inch cotton, and two process picking. I have found the card room cost to be very low compared to some other lay-outs that I have tried, while the waste and breaking out is also less on this layout than any other that I have ever used. By breaking out, I mean changing the hank roving.

Figure 2 shows a lay-out for 70s warp yarn that I have not been using, but one that I believe would prove very good. Here, I would use 1¼-inch cotton, and, as in Figure 1, two-process picking.

CONTRIBUTOR NO. 4635.

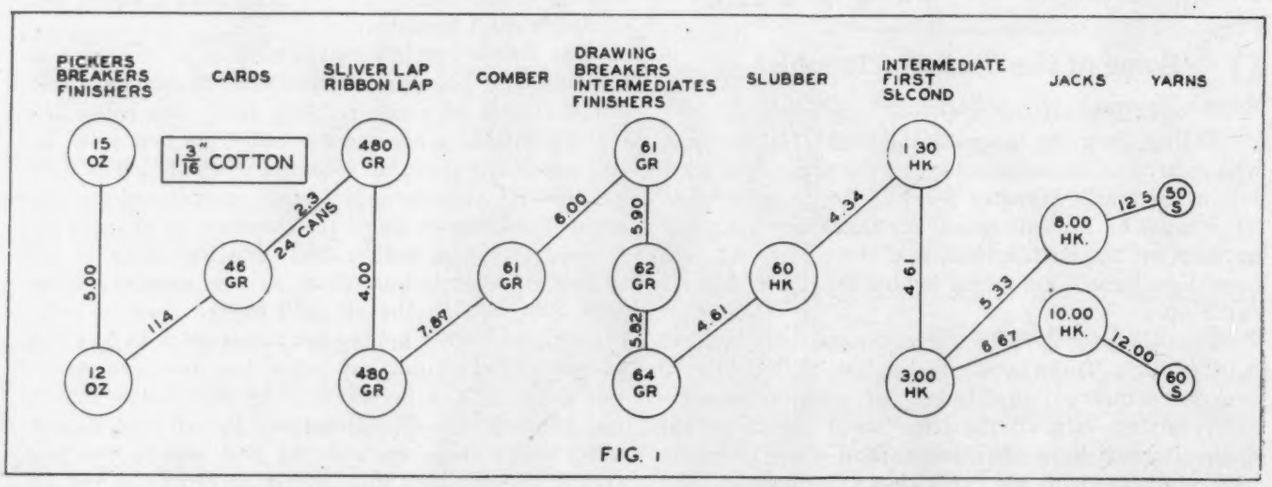


FIG. 1

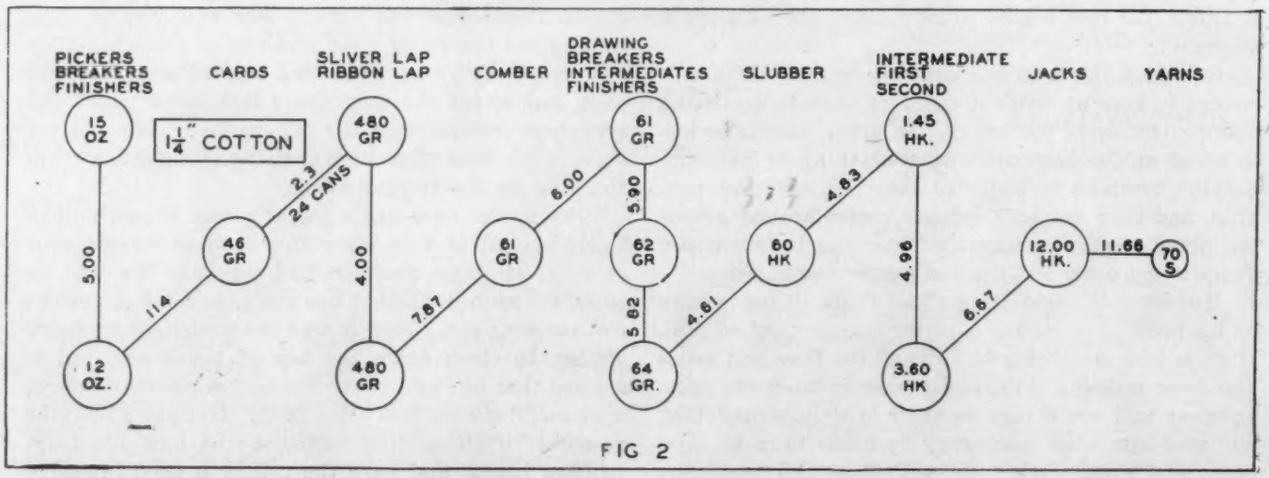


FIG 2

Getting a "Krinkle" in Seersucker.

EDITOR COTTON:

We are making a seersucker, using the following construction: 10 ends white (drawn 2 in a heddle eye) four in 2 dents and one extra end doubled with the adjacent stripe which is five ends of blue. This makes 5 dents in one repeat.

We are using a 30 dent reed—56 pick—30s/1 warp and 30s/1 filling. The goods are woven with the krinkle in it when it comes from the loom, and then shrunk to soften the fabric as well as to cause it to contract. We are having a great amount of difficulty in getting a piece of goods with enough "krinkle" or "pucker" and still eliminate the kinking of the slack white ends.

We first used a tight bottom beam and slack top beam alone. Then we resorted to a vibrator because we were unable to get the krinkle to show up at all without it, due to the fact that the stripes are so small and so close together that even though the contraction was in the stripe it did not show up.

These goods are made on Draper looms, with positive, gear driven left-off motion on bottom beam. The looms have a vibrating whip roll, operated from the movement of the lay.

If possible, I would like to get a sketch of a vibrator that would give satisfaction, and full details as to just how to make a fabric of this kind; also, how many harness are necessary.

CONTRIBUTOR NO. 4629.

Preventing Fly Waste in Carding.

EDITOR COTTON:

In the June issue of COTTON, "(B.M.)" (MASS.) asked what causes an excess amount of waste to fly out between the cylinder and side arch of a card, along with the question, what causes too large an amount of fly waste and droppings through the mote knives on a card, the waste dropping down in little bunches.

In reply to his first question, I would say that "B. M." is probably having his trouble here caused by so many good fibers falling beneath the mote knives, and, as they are much lighter than the other impurities falling, they are sucked out at the open space under the cylinder screen at the side of the card and collect between the cylinder and arch. If he will take down the side door next to the back of the card, he will notice the fibers being sucked out by the draft that exists around the side of the cylinder, although the draft is not strong enough to suck out the heavier impurities. If he will examine this fly, I believe he will find it to contain mostly short fibers.

We find this trouble on most cards, but it can be remedied by setting the back of the card so it will not throw out the good cotton; also, by setting the cylinder screen close. A wide setting at this point helps to create a draft at the side of the cylinder, and will also let the good fibers fall from the cylinder, as this wide setting of the cylinder screen allows the fibers to stand practically straight out and be thrown off by the centrifugal force of the cylinder. If the screen is set as it should be it will keep the loose ends of the

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fibers brushed back and give the points of the cylinder wires a better chance to hold the fibers.

The cards should be cemented underneath at all places of air entrance, and the doors should fit very snug, as loose doors might cause a draft to exist under the card. Air currents play havoc with the working of a card. Therefore, the screens that join at the licker-in and cylinder should be set as closely as possible. I think setting to a 10/1000 gauge at this point is a good setting. This will destroy the current of air following the licker-in and cylinder, thus giving the impurities an opportunity to leave the current.

In regard to his second question concerning fly waste and droppings through the mote knives on a card, I will start with the setting of the feed plate. When setting the feed plate, the first thing to do is to arrange the lap guides so that the sheet of lap will not spread beyond the action of the teeth of the cylinder and fall between the cylinder and casing. If the proper nose plate is used no injury to the fibers will occur, providedt he plate is set to almost touch the licker-in, but this close setting will cause the nose of the feed plate to heat. Cotton, as a result, will stick to it, thus causing an accumulation of dirt to such an extent that what is called a "caked nose" will soon be formed. A dull licker-in will also cause this.

A dull licker-in, or the feed plate set too wide will cause good cotton to fall through the mote knives. Then too, a heavy lap increases the danger of the licker-in plucking the sheet of the lap in tufts.

Therefore, I would advise the following settings of the feed plate to the licker-in:

Wt. of Lap	Size of Gauge
8 to 10 ozs.	10/1000
11 to 12 ozs.	12/1000
12 to 14 ozs.	15/1000

Setting the Mote Knives.

If the mote knives are adjustable, they should be set as close to the feed plate as possible. The reason for this being that when the licker-in plucks the fibers from the nose of the feed plate, the loose ends of the fibers are standing nearly straight up. There is no danger if the mote knives are set at such an angle that the teeth of the licker-in will strike the face of the knife before it does the knife-like edge.

No doubt, it is now obvious to all that the fibers are standing straight up when they are on their downward stroke, but as they make their turn under the licker-in, the centrifugal force will throw them out. This is why the mote knives will knock off good cotton when set too far under the licker-in. If the stock that is being used is uniform and clean, set the mote knife brackets at the top parallel with the frame side of the card. If the stock is very poor, the mote knives should be set an angle of about 18 degrees.

In setting the nose of the licker-in screen, the nose should be set to 3/16 of an inch when the stock is poor, and to 1/8 of an inch when the cotton is clean.

Below are a few of the reasons why good cotton is found underneath the card at the back:

1. The sheet of lap being too heavy for the speed of the licker-in.
2. Feed plate set too far off from the licker-in.
3. A dull licker-in.
4. Mote knives set at the wrong angle for the grade of cotton being used.
5. The licker-in screen nose set wrong for the grade of stock being used.
6. The licker-in set too far from cylinder, causing the licker-in to carry the cotton around the second time.

T. R. (N. C.)

EDITOR COTTON:

I notice "B. M. (MASS.) has an inquiry in your discussion columns of the June issue as to what causes an excess amount of waste to fly out between the cylinder and the side arch of a card and also, what causes too large an amount of fly waste and droppings through the mote knives on a card, the waste dropping down in little bunches.

The first trouble, that is, waste flying out between the cylinder and side arch of a card, is caused by ony of the following conditions:

The card not being level, which will cause the cylinder of the card to lean to one side and allow cotton to pass out.

If the bronze bushings are allowed to wear too much the cylinder drops out of its true position.

When the wire has been ground a great amount the diameter of the cylinder becomes smaller, while the arc of the screen remains the same. In this case it requires a man who thoroughly understands a card to set up the screen so as to prevent it from throwing out cotton at the ends of the cylinder.

Then too, the lap guides at the back of the card of either side of the feed plate at times are required to be turned in nearer the center of the card so as to cause the cotton not to be put too near the ends of the cylinder.

In regard to the droppings through the mote knives, the card should be inspected from underneath to see if the cotton glides off of the feed plate and between the first mote knife. If this is so, the licker-in should be looked over to see if it is dull or has low places in the wire. If the wire is found to be okeh, the feed plate should be set up to the licker-in with a 12/1000 gauge, and the licker-in should be set to the cylinder to a number 7/1000 gauge.

If the cotton is found to fall between the mote knives and licker-in screen, the knives should be adjusted either up or down until the proper angle is found. This ought to be about 17 degrees for the first knife.

If "B. M." will do a little investigating and be governed by these suggestions, I believe he will find his trouble.

H. S. M. (GA.)

EDITOR COTTON:

In answer to the question asked by "B. M. (MASS.)" in the June issue of COTTON as to what causes an excess amount of waste to fly out between the cylinder and side arch of a card, I would advise him to take out the screen of the worst card he has and see that it is cleaned and polished good before allowing the grinder

to put it back. Then after this is done, put the screen back and set the back of the screen to the cylinder to a 17/1000 gauge; the middle to a 29/1000 gauge; the front to a 1-4-inch. If he will do this I believe his trouble will be ended.

Then, as to the waste dropping down through the mote knives, this looks like he has some bad lickers-in. If he has, they should be removed, but if they are O. K., then I would try giving the mote knives a little more pitch forward. I would also set the bottom knife to a No. 7/1000 gauge and the top knife to a 10/1000 gauge. Then if "B. M." would set the licker-in screen as close as possible, without allowing it to rub, I believe he will get good results.

I would like to hear from him in regard to what results were obtained if he tries these suggestions.

J. E. P. (S. C.)

"The Second Hand and Labor Turn-Over."

EDITOR COTTON:

Being a consistent reader of COTTON, I naturally see many articles each month which are very helpful, as well as interesting. In looking over the May issue I was very much impressed with the article by "CONTRIBUTOR No. 4022" entitled "The Second-Hand and Labor Turnover," appearing on page 805. With your permission, I feel constrained to offer a few words on the same subject, possibly presenting a different angle.

Within the past few years a stringent competition has sprung up between mills in our industry; in fact, this competition grows keener as time passes, and everyone will agree that the end is not yet. It seems to be a matter of the survival of the fittest, and I feel sure that the mills which will stand the test will be those which, among other things, have given serious thought and valuable time to the proper training of these young men, who, as second hands, in almost every case, have arisen through sheer ability to their present position.

I feel that for a mill to have any measure of success, it must have the loyalty of its employees, and it doesn't matter how wealthy a mill may be, loyalty is a thing so valuable that money cannot buy it. However, it may be found abundant in those mills that have had the foresight to realize the importance of the human element in the mill.

In this day of keen competition and dull markets, efficiency is the keynote in every wide awake mill man's doctrine. He must cut his overhead to the minimum; he must reduce labor turnover, which is an item of cost which cannot well be overlooked in any organization; he must make a better piece of goods; and he must make it cheaper than he formerly made goods of an inferior quality.

Now all of these ideas are very good, and denote progressiveness, but there are two ways to materialize them—the right way and the wrong way. If a man has built a good loyal organization around him, and has the respect and confidence of his employees, he can put it over. No man can run a mill by himself; yet I have seen men very nearly in this condition, although every job in the mill was represented

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by a name on the payroll. Such men seem to have the old idea that they can look hard and drive their people through. Naturally, they do not have the respect and confidence of any of their people, and could not depend upon them in a pinch.

Second hands, as a rule, are men who are ambitious and have the interest of their mill at heart. Since they are as a whole this type of men, I think their superintendents should have them meet him in his office at least once a week. At this meeting, special attention should be given to the human problems which daily confront superintendents and overseers. The superintendent should talk to his second hands about the different types of people, and different ways of approaching different kinds of people on the same subject. He should cause them to feel that he is their friend at all times, and glad to talk to them or advise them at any time. In this manner, he will take a long step toward getting their respect, loyalty and confidence, and when this feeling exists between the superintendent and the second hands it will also exist between the mill and all of its employees for the simple reason that the second hands are a direct medium of contact between employer and employees.

The overseer is, of course, very close to his people, but the second hand should be much closer, because he is always right in there with them. The overseer can have great influence with his second hand, especially in teaching him to use good judgment and economy in the matter of supplies and fixing, and he can give him some coaching on the "humanical" problems. But I am sure, that for the best results, the second hand should go to the superintendent's office, and, for the time being, get the mechanical end of his job off of his mind. He should at this time imbue his mind with the fact that the second hand of today is the overseer of tomorrow and the superintendent of the next day. He should realize that in later years, if not now, he will need to know the very things that the superintendent is now about to tell him.

I wish to say in this connection that my firm has furnished us with a course of lettters for use in meetings of this kind which I have found to be very invaluable. There are a number of such courses available, and if any reader would be interested in looking over a sample of ours, I should be glad to have him ask me for the name through the "HOW OTHER MEN MANAGE" department.

I think I have covered the right way to get about installing any system designed for better efficiency. Now the wrong way, to my way of thinking, would be for a hard-boiled, unfriendly superintendent to give an order that beginning Monday morning, everybody will be required to take on twice as many looms, frames, cards, as the case may be, as formerly, etc. You would hear people say, "What does he think I am, a machine, a mule or something?" Straightaway, the mill has labor trouble on its hands—a thing no mill is able to stand in these times of narrow margins—all because the superintendent failed to do some advanced thinking and acting in the right direction.

I hope that I have made clear my idea that many can master the mechanical end of a job, but very few can handle the "humanical" end, and any man who has

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good second hands who are good managers of people should feel good, but if his second hands are short in this respect, he should remember that they aren't too old to learn. P. R. (GA.)

A Superintendent's Reminiscences.

EDITOR COTTON:

"These efficiency systems may be all right or they may be all wrong," declared the superintendent, as we entered the front entrance of the mill. "It depends, not so much upon the system about to be installed, as upon the man who is about to install it, and the conditions under which he is working."

He was, apparently, very much engrossed in our discussion, but as we walked through the spinning room, we came upon a spinner of some seventeen summers who seemed to be fighting hard but accomplishing little with her work. As I observed her in the act of getting up an end of spinning, her lack of speed indicated clearly to me that she was a novice.

The superintendent abruptly stopped our conversation, and as he went to work helping the little girl, a broad smile broke over his face. As he worked his way to her he spoke.

"You know, you remind me of the days when I was learning, and cause me to remember how forsaken I would feel when I had done my best, and results showed that I hadn't done enough. I think that the frame of mind which we are in, while learning, determines in no little degree our future attitude toward the textile industry, and our future in it. That's why I like to help you, and assure you that there isn't a person in this room who didn't have to learn, just as you are doing."

The little spinner brightened up, and smiled her appreciation. As she resumed her work, her actions were so much more speedy and skillful that I could hardly believe my eyes. As I watched her, an idea came to me that I had never thought upon before—the psychological study of one's people—moods, and workings of the human brain, as related to the speed and efficiency of the actions of the body.

At this point, the superintendent rejoined me at the end of the little spinner's alley, and we resumed our stroll toward the office of the spinning overseer. As we entered, a glance over the room showed me that the overseer was scanning some figures at a table in one corner of the room where the second-hand had just completed a sizing of yarn. Over in the opposite side of the room the second-hand was administering first aid to a little girl, who, it seemed, had cut a finger. As I took in these things, my mind was still dwelling back in the spinning room, where the little spinner was so badly in need of assistance, and, it seemed, there was no one to render it but the superintendent of the entire plant. As the superintendent looked over the numbers with the overseer, I could not restrain myself longer.

"Have you always made a habit of falling in and helping your people with their work, or is it still in the experimental stage with you."

"I am a friend of the textile industry," he said, "and by that statement I mean that I work always for the best interest of my firm, and no less incessantly do I work for the best interest of the people who are working *with* me.

"You will please note the word *'with'* in this connection. It is an idea that I have successfully put over here. I try to make everybody feel that he is working *with* me—not *for* me. They know that I stand four-square for a square deal, and that so long as they are in the right, I am with them.

"I have a mill here carrying more spindles than the average, but I am personally acquainted with all of my people who have been with me for as long as one week. And, in this connection, I might add that my labor turnover is kept down to a minimum, and so rarely do I see a new hand that I invariably investigate as to why the change in personnel was made. Now this state of affairs is brought about through my attitude toward, and study and treatment of my people—their needs, desires and ambitions.

"Now, to get back to the little spinner, who claimed our attention awhile ago. I did not know at the time I assisted her why a learner was, apparently, overloaded, but I did know that it was unavoidable, and that the overseer or second-hand would correct it as quickly as possible. So when we came into the boss spinner's office we found, receiving first-aid, the girl whose regular allotment is those same sides of spinning.

"Now when we came upon the little learner, one glance at her countenance told me where she wished the entire textile industry was, and experience teaches me that a person in that frame of mind is more easily accessible from a psychological point of view, than one who is already feeling good, at the time you approach him. If a person is feeling good toward you and the firm and the industry, that is sufficient; anything you might say to him would be superfluous. But in the matter of the little learner-spinner: She didn't know where her spinner had gone, nor why. She only knew that she was expected to keep her ends up and keep her roving set in, and that she was unequal to the task. She had, no doubt, heard how bosses would come around and bawl you out, or fire you in some plants, so only a few minutes were required to get the thought instilled in her young head that she hadn't a friend on earth—even her parents had turned against her, else they would never have asked her to come in here to work.

"Now having a knowledge of these moods and attitudes from experience and observation, I know how to combat them, and in so doing, I defeat the arch-enemy of working-people, viz., the labor agitator. He cannot touch them so long as they feel that I am their friend, and working for their best interest.

"Tonight, upon retiring, I shall have pure thoughts in my mind to guide me to the rest I shall need. I shall be comfortable in the thought that my every contact with humanity has been on the level and with honest intent upon my part.

"As I doze off into the land of dreams, I shall have before me a vision of the little spinner, with her eyes sparkling, as she tells her home-folk of the assistance I gave her, and what her impression of her superintendent is."

As I looked at my watch, I regretted to see that I

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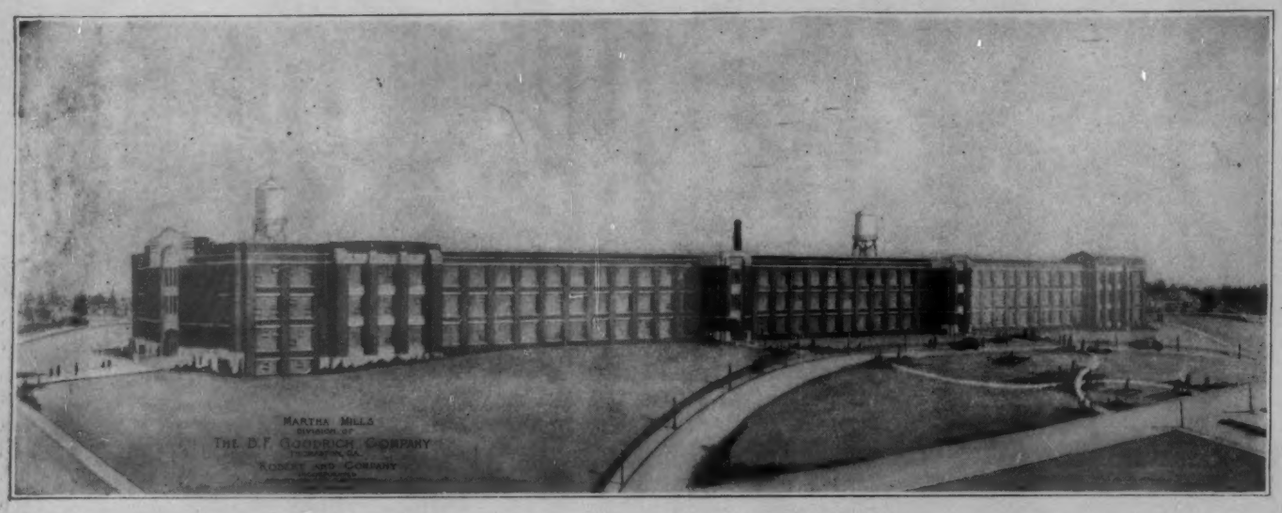
Goodrich decides on AMCO

The Original Martha Mill,

at Thomaston, Georgia, the central unit in the photograph of the completed mill shown below, was equipped with Amco Heads and Amco Humidity Control Stations.



WHEN Goodrich recently enlarged their Martha Mills they specified American Moistening Company equipment for the two extensive additions through Robert & Company, Inc., Engineers of Atlanta, Ga.

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would have to hurry to catch my train back home. But as I shook his hand, I assured him that he had given me much food for thought, and that I would give it a thorough try-out at home.

CONTRIBUTOR No. 4605.

Methods of Splitting Cloth.

EDITOR COTTON:

In your January issue, "CONTRIBUTOR No. 4102" asks how he should split a 36-inch goods in which he has skipped several dents so as to mark the place where the splitting is to be done. We have had some experience along this line and I offer the following in the hope that it will help him.

The cloth can be split with a knife at the breast beam in a very satisfactory manner, but the objections to this method are that if the knife is not watched, and set just right, it will get too far to one side or the other and cut the cloth. Also, it is rather an awkward job to get the cloth off the loom after it has been split into two or more parts, as it complicates the marking up of the cloth; is extra work for the cloth hauler, cloth room, etc.

Splitting in the cloth room could be done by a specially made machine, but not otherwise in an efficient way. At least we could never figure it out without a lot of expense that we could not stand for. What we finally did, and what "CONTRIBUTOR No. 4102" may find satisfactory, is to tear it. We inspected the cloth over a cloth machine and simply tore it at the open space. This left an edge about as smooth as any other method and was perfectly good for our purposes, the tearing being done on the inspecting machine as the cloth was inspected.

T. R. (S. C.)

Some Thoughts on Specialization.

EDITOR COTTON:

During the past four months much has been heard regarding "specialization," or by whatever name one might elect to call it in the mill. There seems to be a feeling that a great new discovery has been made and that great things are to be accomplished at once.

Nothing new has been discovered. Specialization is as old as the world itself, almost. Sad to relate, though, it seems to be a new thing in the mill. Specialization was employed so successfully in the automobile industry that today the automobile undeniably offers the greatest dollar-for-dollar value to be found anywhere.

Specialization has also been narrowed down to an almost perfect science in the electrical world. A huge steel monster can now produce about 70,000 incandescent lamps in *one hour*. Just think of it! One machine can produce as many lamps in one hour as a good sized mill can produce pounds of yarn in *one week*. That is what specialization can do when scientifically applied.

Due to the very nature of cotton, we cannot of course ever hope to specialize to the absolutely thorough extent that several great industries have already done, but we surely can improve, and there is tremendous room for that improvement.

The textile industry is truly years behind all other great industries, but that matters little. The great thing about it all is, that we are at last awakening to our sad plight. We are beginning to discover that the pitiful shape the industry is in, is not due to any outside influence, but due solely to our own gross incompetence.

Some of our finest mills are sadly handicapped by too much family. The "Old Man" by the sweat of his brow finally worked himself up to the superintendency, and his two or three sons naturally had to be overseers. A new agent takes hold, and regardless of how competent the executives of that mill happen to be, out they must go, because the agent has his own relatives or personal friends who simply must eat. All this may make a few old timers wince, but that is just what is needed.

In one particular mill city competition is, or used to be, pretty keen between the various mill base-ball teams, and a good ball player could always rest assured that a successful mill career awaited him. Think *that* over carefully. Little wonder that more progressive sections stole the business from under their very noses.

What about the overseers or superintendents of a few years ago (probably still in existence, but in diminishing numbers, I hope) who went out of the mill at night full of troubles, and drowned said troubles in a quart or so of whiskey, only to get back on the job the following day in a worse humor than ever. Modern business cannot afford to tolerate such things, nor does it have to, not even in the cotton mill. There was a time when a small vest pocket book carried by some such inebriate as the foregoing, controlled the job. But now-a-days the deep secrets of the past can be bought at almost any book stand for a dollar or two. Any man who wants to know mill practice and mill mathematics can secure unlimited publications for a moderate price.

But much more than present day calculations will be needed if the mills are to prosper. One big step toward future success, which any mill can take, is to welcome new and educated blood into its ranks. Drop the family and friends stuff and look to the colleges and textile schools for material for the future.

Take these men who have been trained in theory and spend a little time and money training them in practice. Inaugurate a carefully prepared course of intensive training in practical mill work for a few of these theoretically educated men. Give them so much time pushing trucks around; so much time running machines and so much time in each department working with good fixers and operatives. Do not give the responsibility of hiring them to the second hand or overseer, but control them directly from the main office. Make it as much the duty of the various overseers to see that they are properly trained as it is for the overseer to get his required production. In three or four years of such training, the mill will have produced a man, or men, who will prove invaluable. Men such as these will then be in a position to repay the mill a thousand times for every dollar invested in their training. There will have been produced what the av-

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erage mill so sadly lacks—a practical mill man, with his vision broadened by education.

When will the cotton industry realize what other great industries seem to have found out years ago, namely, that an organization does not build men, but men build the organization.

To go back to that machine that produces 70,000 lamps an hour. That machine is a wonderful thing, but it did not, or cannot, produce men! Men produced an organization and that organization produced the machine. In the future, bigger men will produce bigger organizations, and these bigger organizations will in turn produce bigger machines. This state of affairs will go on indefinitely. It must go on indefinitely to survive and prosper.

That is just what has started to happen in our mills. We have been stagnant too long already, and the sooner old customs and barriers are broken down, the sooner the cotton industry will pull itself back into a healthy, profitable state.

C. C. (TEXAS).

The Second Hand— His Qualifications and Selection.

THIS is the second of a series of articles covering the duties and relations of the second hand, appearing in the "How Other Men Manage" department. The first, discussing the relation of the second hand to labor turn-over, appeared on page 805 of the May, 1929, issue. Others will be published in subsequent issues.—The Editor.

EDITOR COTTON:

The textile industry stands upon a tripod, the three legs of which are called capital, labor and management.

Capital furnishes the money, the motive power of any industry. Money is necessary in providing the equipment, which includes the buildings, machinery, etc., in securing the raw materials, in hiring the help and so on.

Labor does the work. In spite of the strides that have been made in the improvement and use of automatic machinery much of our work is still done by hand, or at least the machines must have attention by some individual. Labor will always remain a factor to be reckoned with.

Management has incumbent upon it the duty of producing, at a profit, a product that will meet competition, and that will continue to satisfy the customer so that the company can remain in business. Management extends from the chairman of the board of directors to the humblest section man. The problems of the chairman and the president are largely financial, while those from the general manager on down have to deal more with the practical manufacturing end.

In these series of papers I wish to devote some thought to the second hand, a very important link in the chain of management.

In this age of competition it is very essential that every one who has anything to do with the management of a textile plant be competent men and awake to their responsibilities. This is especially true of the second hand, the overseer on the floor. His is a direct

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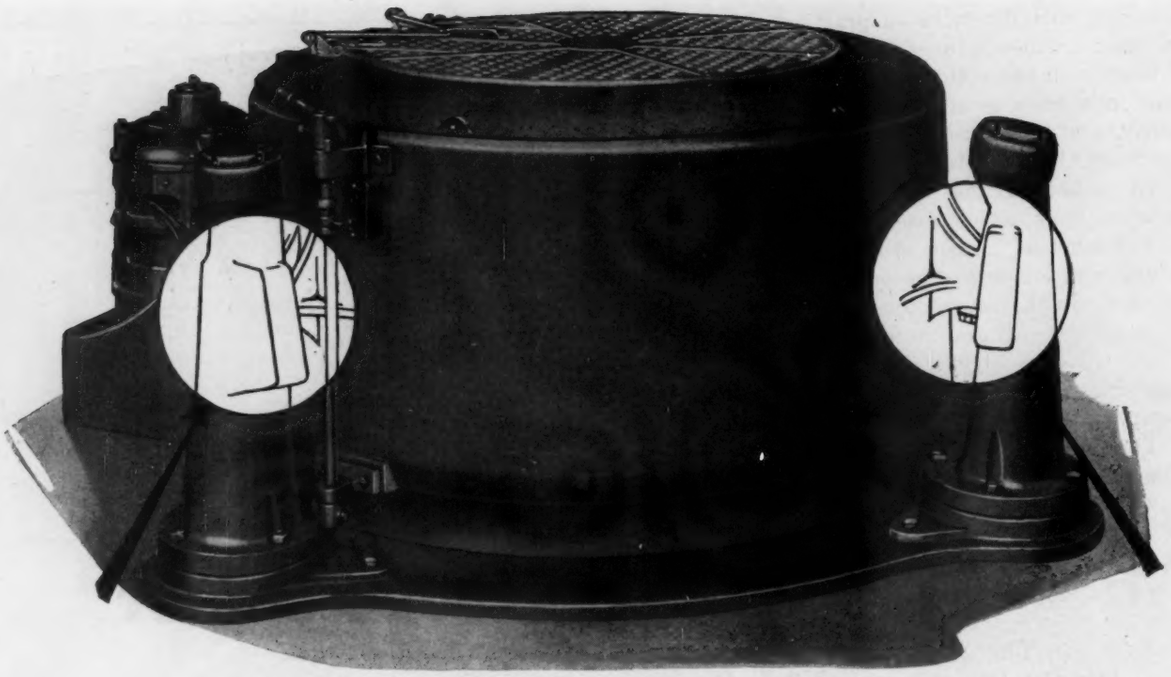

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contact with the help, with the machinery, with the stock in process and with practically all problems arising in his department. In my humble opinion the man who will make an ideal second hand has these general qualifications: a natural leader, trained in the department and with technical training, tactful, not afraid of work, loyal, progressive, honest, a man with common sense and a lot of "stickability."

In this connection the foreman seeking material for a second hand will naturally look for the man who is trying to prepare himself for a bigger job. He wants the man who is improving his opportunities to learn more on the job, and is trying to acquire a technical training by either going to a textile school or by home study. The young man who hopes to be advanced will have to deny himself a lot of privileges of the other fellows. He will have no time to waste in watching the clock or in waiting for the whistle to blow for stopping time. A young man was "working through" a certain mill when one day just before quitting time at noon, he was seen by the superintendent to go out the gate and on to his boarding place for dinner. The next day the same thing happened. Needless to say there was soon one man less "working through." At night when the bunch is hanging out around the stores or at the picture show, the wise young man will be found at home with his textile books. When a disagreeable job presents itself the foreman knows whom to call upon. Then when a dependable man for a bigger job is needed he will likely find this same man ready.

When selecting a second hand the superintendent will want to cooperate with the foreman, for no man should be given the position of second hand who could not reasonably be expected to qualify for overseer's place when it becomes vacant. The man who would not make a good overseer will not make a good second hand, for their duties are largely inseparable. The superintendent who allows any foreman to put on an inefficient second hand is only multiplying his own worries. Not only will that department give him trouble, but later when the overseer leaves he faces the very disagreeable task of promoting someone over this inefficient second hand. The wise overseer will readily appreciate this and will consult his superintendent on this extremely important matter.

If possible, the second hand should come from the ranks of the department. In fact, the overseer should keep someone in his organization, sort of an understudy, in line for this post. But it sometimes happens that no one in the department is suitable for the job, and it is necessary for the overseer to go to another department or sometimes, even to another mill for a man. In many cases of this kind the overseer has to carry the new man until he learns the job and has also to help break down a wall of jealousy and prejudice that always exists following the promotion of some man over the heads of the older men of the department. If for any reason it is necessary to go outside for a second hand the overseer should be careful to pick a man who is a ready mixer, one who will begin at once to try to make the help like him. Of course he must have the other qualifications of a good second hand.

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Let us consider some of the qualifications of a good second hand. He should be acquainted with, and trained in the work of his department. Since it is up to him to see that the work is done as it should be done it is to his advantage to know how to do the work himself. But it is essential that he at least know when the work is being done correctly. If he is from another department he will have to acquire a working knowledge of the room as quickly as possible. The overseer will help him, of course, but the new second hand must learn much by direct contact with the help. I once knew of a man who was given the position of second hand in a department in which he had never before worked. He was familiar with the work in most of the rest of the mill, and was acquainted with the help. He first talked with the section men, letting them know that he expected to make no radical changes, but frankly that he knew little of the work, but was willing to learn. He had the same talk with the rest of the older help. The result was that every one tried to help him and he made a success on the job.

Another qualification of a good second hand is tact. In his dealing with the help, the men in the other departments and the office he so much needs to cultivate this grace. It is so easy to give offense by the wrong kind of approach to a person, and at once defeat the very end he is trying to accomplish. In giving an order it is just as easy to say "Please do so-and-so," or "Let's do this," as it is to give the order in the nature of a command, and much more effective in getting a favorable response. The day of force and abuse on the part of the overseer and the second hand has passed along with slavery and the other relics of barbarism. Anybody can work good help, but it takes a good tactful man to work sorry help.

That a second hand should not be afraid of work does not mean that he is to try to do all of the work in his department, but rather that he show a willingness to lend a helping hand when necessary. As a rule, a second hand should have very little detail work to do, for he needs to be about through the room overseeing the work that is going on. As important as it is to keep a loom supplied with filling, it is an economic waste for a high priced man like a second hand to have to "tote" the filling to the loom. It is his duty rather to see that the person employed for that job keeps it up, and when the filling can not be secured to find out why, and report to the proper authorities so that steps can be taken to get the filling ready. When a section man reports that he has a spinning frame that he cannot fix the second hand should examine the frame carefully, and make such suggestions as he thinks necessary, but only as a last resort should he take the tools and do the work himself. He should not engage in idle conversation with his help, as this is a very bad example. And never, under any circumstances whatsoever, engage in play or joking with the help while on the job. But he should rather be on the go, passing among his help, ready to give suggestions or criticism or encouragement where necessary.

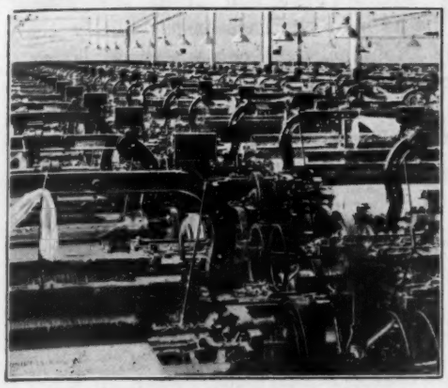
That a second hand should be loyal goes without saying. Regardless of what he, personally, should think of the policies of the mill, as long as he remains in their employ, as a leader, he must refrain from giving expression to any thoughts along this line, especially in an unguarded moment in the presence of some of the employees. The same applies to what he may think of the overseer, the superintendent or any of the other officials of the mill.

The second hand who is not progressive will soon be a back number. He must keep abreast with the latest in manufacturing methods. Numerous textile books and periodicals can be secured with little effort, and they serve to keep him in touch with what other men are doing. Failure to keep up has served to keep many a good man back, while the textile graduates passed on to the better jobs ahead.

The textile industry has no place for the dishonest second hand. A man may fool the boss, and maybe even the help for a while, but he will soon be found out and kicked out! A successful second hand must be square and honest in all his dealings. Never make any promises that you do not intend to fulfill, or that there is any doubt in your mind of being able to fulfill. Nothing so quickly gets a man at outs with his help as broken promises. No one is so contemptible as a second hand who will take advantage of the trust of even the humblest of his employees in a business transaction. Be open and above board in all dealings both in the mill and on the outside.

The man who is not endowed with at least common horse sense will not make a very successful second hand. It stands to reason that the second hand must use judgment in determining when a man is being overworked, and when he hasn't enough work to do and to make adjustments accordingly. He should never be overbearing nor unreasonable in his demands upon any of the help. He should be firm, but kind, in all his dealings with the employees. By all means should the second hand avoid arguments with the help regarding the work. In the first place he should have a mind receptive to suggestions. For the man on the job will often advance an idea that is worth trying. But if the second hand decides that he wants his own plan tried first, then simply request that the work be performed a certain way, and see that it is, but do not argue. Be sure that any order given is thoroughly understood. So many men fail at this point. They think that they have given the order clearly, and the man hating to have to ask the second hand to repeat the order, or to make it clearer, makes a stab at what he thought was intended. The result is that confusion is brought about, and the man quits rather than be bawled out. The second hand with common sense will not try to appear "stuck up," nor try to make the help feel that he is better than they. He will, of course, avoid the other extreme of being too familiar with any of the employees, especially on the job.

The good second hand must have confidence in himself and in his ability, and must be able to "stick it out," regardless of the discouragements that he may get. The man who does not believe in himself cannot expect other people to believe in him. I know of some fine men, who should have been second hands, and possibly overseers, long ago, but they lacked that confidence in themselves necessary to hold either of these important positions. The overseer who keeps a sec-



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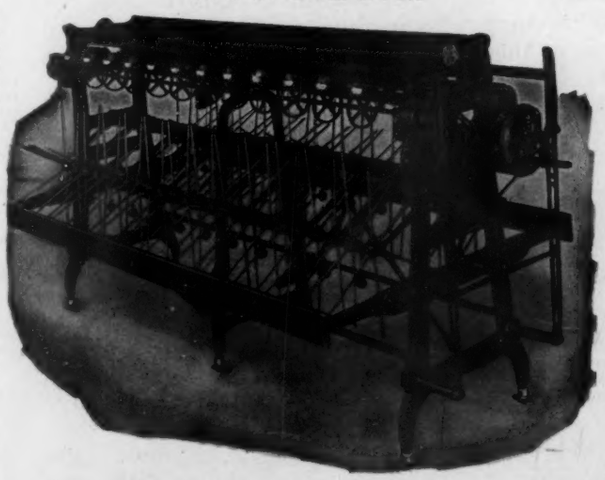

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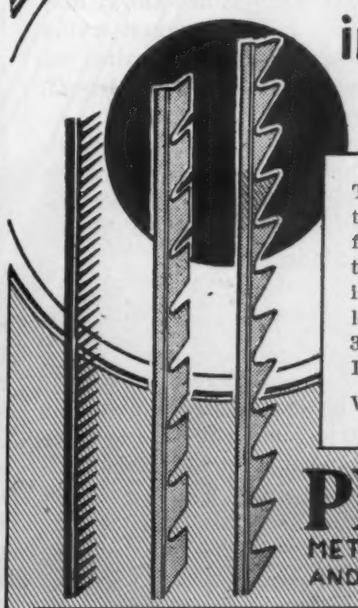

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ond hand that he cannot trust to operate the room in his absence, is doing both the man and himself an injustice. If the second hand gives an order, the overseer should not change it unless he sees that it will too badly disrupt things, but should rather let the order stand as given, then if the second hand has made a mistake, he can profit by it. But the good second hand will not give up because he has made a mistake, but will let that one be a lesson, and try to avoid it in the future. He should practice, or rather cultivate, the habit of giving orders without asking the overseer or the office to back him up. Of course errors will be made, lots of them, but that is the price of developing a good second hand.

CONTRIBUTOR NO. 4022.

Causes of Warp Kinking with Plain Cams.

EDITOR COTTON:

In a recent issue, "CONTRIBUTOR NO. 4625" submitted a question with reference to weaving a 37½-inch 112/60, 3.85-yard broadcloth, 2-harness cams. He said that when he uses plain cams, the looms make seconds due to the warp kinking, but that he has some looms on this same construction with staggered cams and does not have this kinking trouble. He wanted to know why the plain cams would cause the warp to kink while the staggered cams would not cause this trouble.

In reply will say that there are so many specifications or local conditions which would affect the kinking of a warp on 112/60 goods that it is only a guess to try to answer this question. However, a few of the things which might cause a kinking of the warp would be as follows:

First, if the harnesses are set too tight, kinking will result. If the loom has a vibrating cam, it may not be in the right position. I would suggest trying this cam at its highest point, with the reed against the fell of the cloth. Too much friction on the let-off, causing it to jump, will result in kinking.

If the whip roll and take-up roll are set too high, the yarn will be strained against the drop wire bar, which might cause a kink. Another cause would be harnesses not shaded properly, that is, one harness having much more stroke or travel than the other.

P. P. (S. C.)

EDITOR COTTON:

Recently you had from a contributor an inquiry asking why it was that he experienced kinking on 112/60 broadcloth with plain cams while the loom on which he used staggered cams did not have this difficulty.

Staggered cams, when set correctly, will take the slack out of the warp when the harness is shedding. If this man would set his old cams at a quick opening, that is, have the harness level when the lay of the loom is on back center, that is as far back as it will go, and if at this setting his selvages should weave too loose, he should delay the harness, that is, have the crank shaft half way between the bottom and back center with the harness level. Also, in setting the harness in putting in a new warp, he should have his back shed come within 3/16-inch from the race, front harness to be as near the race as possible, without rubbing. He should also be certain that his top roll straps are centered.

I hope these suggestions will be of benefit to anyone having this trouble.

P. T. S. (MAINE)

EDITOR COTTON:

One of your subscribers recently asked what would cause the warp to kink in making a 37½-inch 112/60, 3.85 broadcloth. He said that when he uses staggered cams he does not have trouble with the warp kinking, but that this difficulty comes up when he uses plain cams.

It is my opinion that a common cause of warp kinking on broadcloth is that one of the shades is too slack. If either the top or the bottom shade is too slack on a construction as heavy as this, it willl cause the warp to kink. It is also probable that the whip roll is too high, and I would suggest that this man investigate this point.

M. T. (S. C.)

Life of Shuttles and Pickers.

EDITOR COTTON:

Answering the inquiry of "CONTRIBUTOR NO. 4565" concerning the life of leather pickers on Modified D Draper looms running on 7 to 14-ounce duck will say, an excessive number of shuttles being used is supposed to have been the reason for the question asked, and while no duck is woven in our mill, we are confronted with a similar problem. We weave mattress ticking with Jacquard effects on the Modified D Draper loom.

Due to the thick bottom shed formed by the Jacquard harness and the tight warp, our shuttles wear out fast. It may be of interest to "CONTRIBUTOR NO. 4565" to know what we have found are the principal causes of this evil, but first, I shall answer the point that was asked.

We have found that our shuttles are good for about six to seven months. Eight to nine months is about the maximum that can be attained under favorable circumstances. This seems a rather short life for a shuttle, and under the circumstances which "CONTRIBUTOR NO. 4565" mentions, the minimum probably should be set much higher, about ten months I should say.

The main reason why shuttles should last longer when weaving duck, is that the shed formed is more even, is larger and is open longer. On plain looms one finds that the heavier the goods, the faster the shuttles wear, and this is for the following reason. The more power that is used for the forming of the shed the less power is available for the pick. To keep the loom from slamming off the leverage of the pick motion has to be increased, with the result that the shuttle does not fly as true and wears faster. The power also has to be increased because the tight and heavy warp retards the shuttle more than a light warp.

Pickers, it will be found, last approximately as

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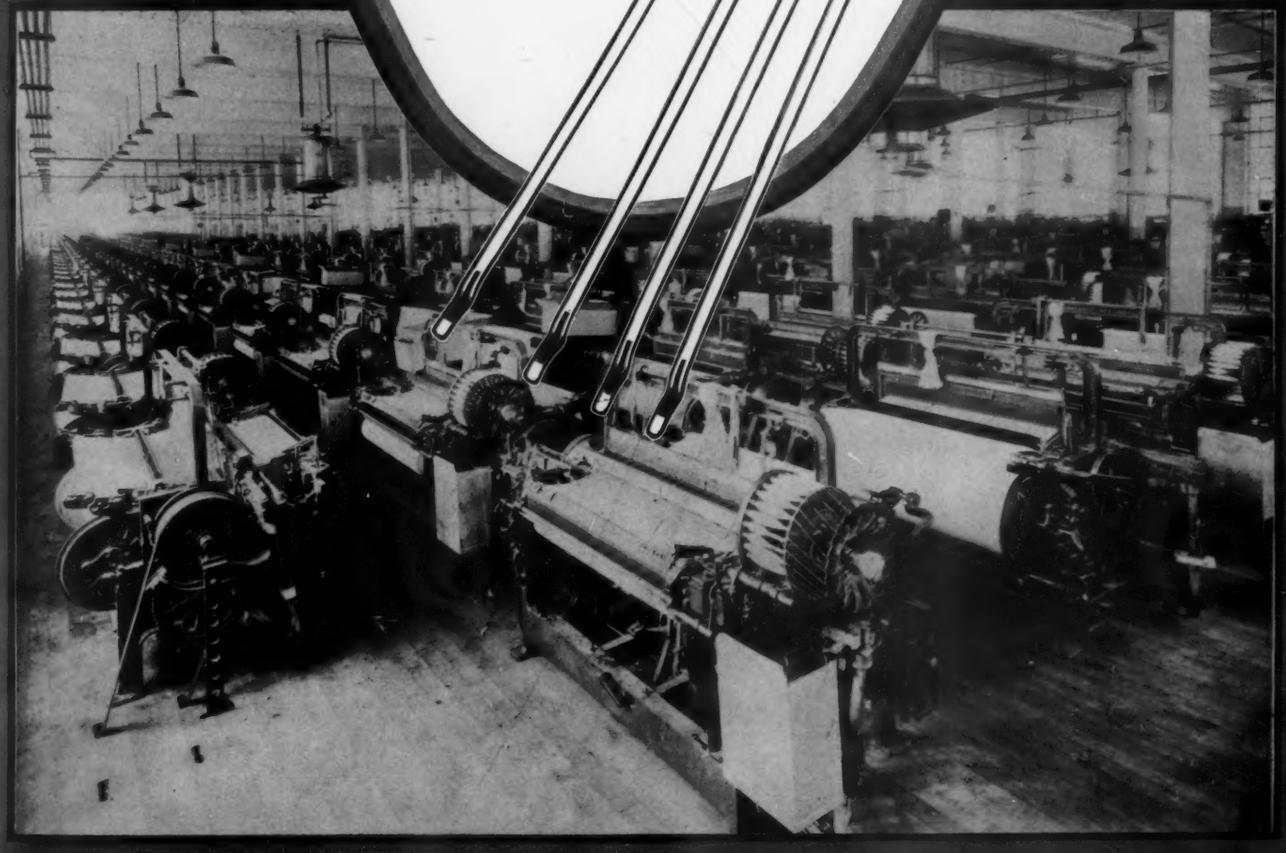

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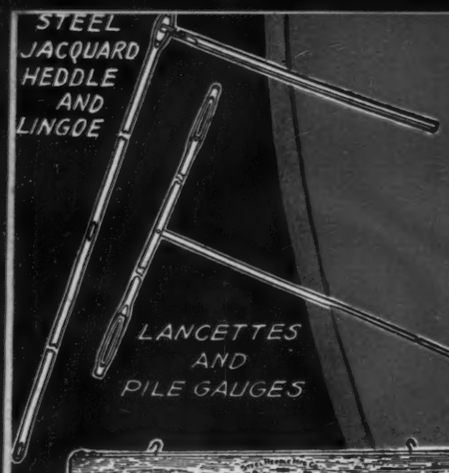

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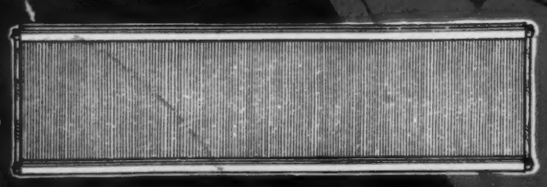

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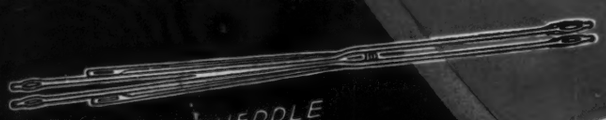

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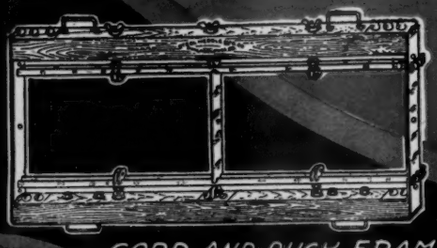

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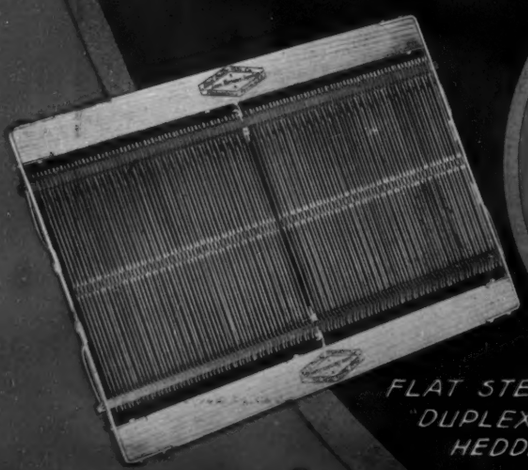

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STEEL SOLDERED REED

long as the shuttle and it is a good practice to mount new pickers on the picker stick whenever a new shuttle is put in the loom.

A minimum life of ten months was mentioned in the foregoing, but one should bear in mind not to demand of the loom fixers only to attain this minimum, but urge them to set their looms so as to get the maximum use out of the shuttles and pickers.

In this connection, what follows may be of interest to "CONTRIBUTOR NO. 4565."

Too much power, as is often the case with other troubles, is the chief factor in reducing the life of a shuttle.

Due to this, the shuttle is more apt to fly untrue, causing it to slap when entering the box. Waves or ridges on its back are the result. The picker stick also has a tendency to jump when too much power is applied, bringing the shuttle in contact with the top view of the back box plate, and thus wearing it out on top near the point. There is also a tendency for the shuttle to twist in its flight, created by this last named factor, which can be detected from the rounded off back side of the shuttle.

The binders will have to be tight to check the shuttle, causing more wear.

Too much power is equally bad on the picker. As the binders are tight the sending picker has to withstand a greater pressure, and as the shuttle is more likely to bounce, the receiving picker will be worn excessively too.

As the straight flight of the shuttle is all important, to prolong its period of usefulness, it is well to remember that the following maladjustments may cause it to fly untrue:

Pick set too late or too early; the stroke too long, causing the picker stick to bind; lost motion in Pitman arms; worn rocker shaft; warp too tight and bottom shed too high above the lay; box plates not in line with the reed and the raceplate. Any misadjustments of the box plates are especially harmful to the shuttle.

Maladjustments of the transfer motion are also harmful to the shuttles.

No part of the motion should come in contact with the shuttle. The transfer hammer, when in its lowest position should be in the center of the shuttle, and the transfer fork should be set the same way. The bobbin support must always be in good working order and the bobbin tip support should not come in contact with the shuttle during a transfer. The shuttle feeler should prevent a transfer if the shuttle is not properly boxed.

Not enough care can be taken when mounting a new picker on the picker stick. Rounding off the back edges of the stick will facilitatae the mounting and will keep the leather from cracking. The face should be left square to keep the picker from twisting. It is necessary to have the picker on as tight as possible to insure long wear.

When cutting the hole, a reamer should be used and the center of the hole should be in the middle between the two rivets that hold the picker together. It generally is necessary to trim the lower edge of the picker to keep it from rubbing on the bottom box plate. This is better than to cut the hole lower. In the latter case, as the picker wears, the shuttle point will come in contact with the lower rivet, dulling the shuttle point, and in time, breaking the rivet, making a new picker necessary.

Loom fixers often cut the hole before mounting the picker. It is better, however, to place the picker on the stick, having first trimmed off the lower edge, push the shuttle against the picker, remove the latter again and cut the hole with the imprint of the shuttle point as center.

Generally the hole in the right hand picker will have to be cut deeper than in the other, as the shuttle must enter the right hand box deep enough for a transfer. For this reason, right handed pickers usually wear out faster than left handed ones.

When in its forward position the picker should raise the end of the shuttle about ⅛-inch, and when all the way back, the shuttle should rest evenly on the bottom box plate.

The screw that holds the picker should be driven deep to keep the picker from rising and to prevent the filling from being cut and the front binder roughened.

Worn leather bumpers in the lay slot will often let the picker hit the top rim of the back box plate, damaging the upper rivet.

While the above does not exhaust the subject, "CONTRIBUTOR NO. 4565" may see how many points have to be watched in order to insure a long life for the shuttle as well as for the picker.

CONTRIBUTOR NO. 4606.

EDITOR COTTON:

You recently published an inquiry from a subscriber who wanted to know the average life of leather pickers on Modified D Draper looms, running 7-ounce to 14-ounce duck. I shall be pleased to furnish in this letter some figures we have along this line, but our tests run on goods up as high as 18-ounce.

The time of the test which we conducted was three months, on 226 looms. The average speed of the looms was 150 picks per minute. Our tests showed that on these looms in this length of time, we used a total of 204 leather pickers.

Your correspondent also asked for the life of shuttles on this work, and I am sorry that I do not have any information available which will answer this part of his inquiry. I should be very much interested to see the figures of other mills on both of these points.

CONTRIBUTOR NO. 4570.

New Cotton Cleaning Patent.

According to Paul B. Eaton, patent attorney, Charlotte, N. C., there was issued recently a patent to George R. Spencer, of Gastonia, N. C., which patent covers an improved method and means for cleaning cotton. It comprises a plurality of sets of spaced grid bars placed at an angle in the tube through which cotton is drawn from the opener to the condenser, and these grid bars are curbed with a trash container below the grid bars, and one set of grid bars are turned in one direction and a second in another direction, etc. Therefore, as the cotton passes through the tube it is whirled first in one direction and then the other and this keeps the cotton stirred up, and also removes all foreign particles which fall through the grid bars into the trash container below the same.

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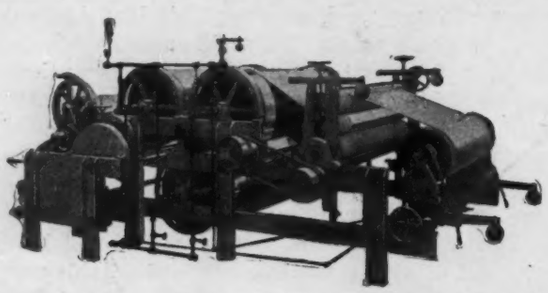

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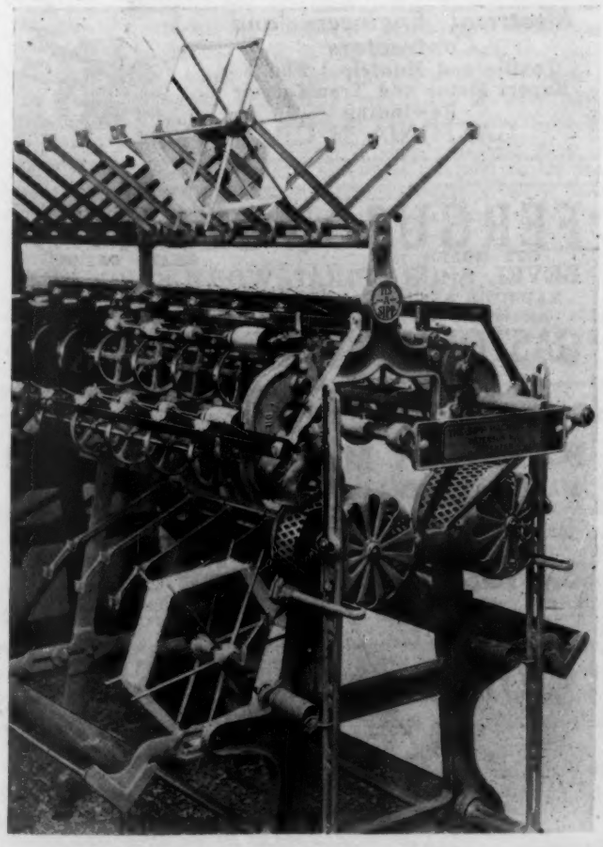
Sipp Double Deck Winder

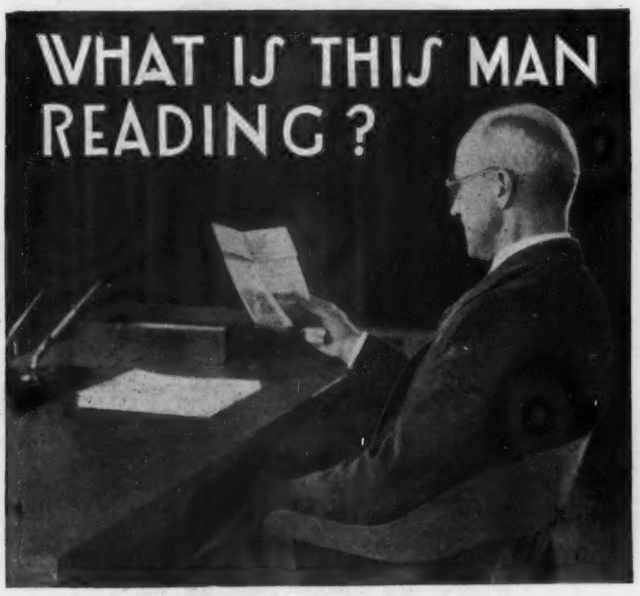
The Sipp Machine Company, Paterson, N. J., have recently developed, and are now furnishing to the trade an absolutely new double deck winder, which machine is suitable for winding silk, rayon and fine cotton yarn from skein to spool, and has been especially designed to overcome the disadvantages of the former types of double deck machines.

By having two separate and distinct lines of spindles which are offset, the upper line of spindles being set back of and above the lower line of spindles, the end coming from the upper skein is prevented becoming entangled with the spool which receives the silk from the lower deck, thus great waste is prevented. One line of driving pulleys is provided to take care of the upper deck and a separate line of driving pulleys to take care of the lower deck.

These machines are equipped with the latest type Sipp oilless spindle bearing brackets, which hold inserted oilless bearings, thus entirely eliminating the necessity of oiling the ends of the spool spindles. They are also noiseless, reversible ,and permit more accurate setting of the bracket, which would naturally result in a much better wound spool. This patented feature is a marvelous improvement and can only be obtained on Sipp winders.

The traverse motion used on this machine is not accompanied by the usual jar and vibration, it is stated. Rigidity is secured by providing metal carriages on each side of the machine, each carriage sliding on a rigid bar, which prevents winding that is defective at the ends of the spools. The inner ends of these bars are secured in the main frame and the





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Thomas Halton's Sons Issue New Catalog.

Thomas Halton's Sons, Mascher Street below Oxford, Philadelphia, Pa., manufacturers of Jacquard machinery, have recently issued a very neat and instructive catalog on Jacquard machinery. The catalog, which will be sent by the company to those requesting it, offers very detailed descriptions and illustrations of all parts of the Jacquard machine. There is no doubt of this catalog providing a valuable addition to the Technical library of any Jacquard man.

Binks Spraying Machine Catalog Announced.

The release of Bulletin No. 12, covering hand and power sprayers for cold water paints, whitewash, calsomines, insecticides, etc., was recently announced by the vice-president of the Binks Manufacturing Company, 3114-26 Carroll Ave., Chicago. The catalog gives a very thorough explanation, by photos and descriptions, of the many wide-spread applications for this equipment. The catalog may be secured by writing the Binks Manufacturing Co.

A Recent Jacquard Invention.

According to Paul B. Eaton patent attorney, Charlotte, N. C., E. Holden of Rome, Ga., has applied for letters patent on a color indicator for Jacquard looms. This indicator reduces to a minimum the number of extra holes which have to be punched in the card in the pattern—only one extra hole in the card being required where a change of color in the design is desired. Hence, it can readily be seen that a great amount of labor is saved by this new invention, for in a long pattern a great reduction in the number of holes required is realized. This indicator is adapted to be used on the regular box chain attachment of any style of loom now in use without moving the box changing mechanism from the head motion.

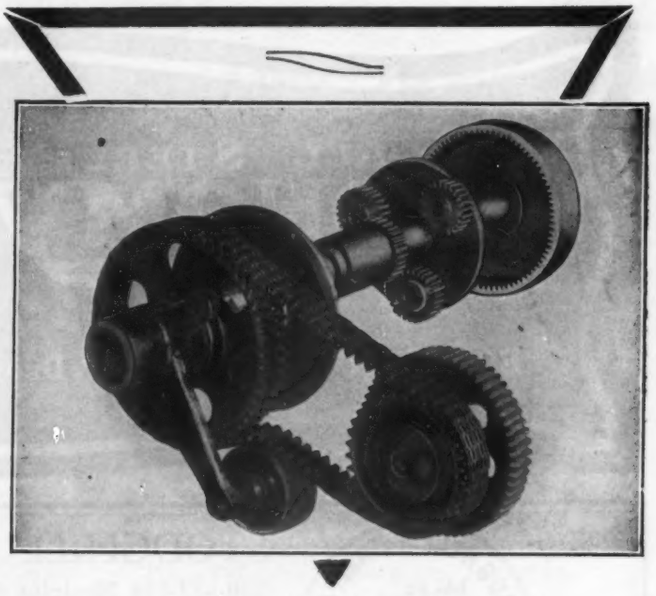
Appointed Southern Representative.

M. C. Sanders, of Gastonia, North Carolina, has taken over the southern agency for the Eastern Fountain Co., selling drinking fountains of all kinds, along with other lines.

Wool Mixtures With Chrome Fast Dyestuffs.

In an announcement made by the Ciba Company, Inc., it is stated that Sample Card No. 707 of the Society of Chemical Industry in Basle illustrates a number of chrome fast dyestuffs dyed in loose wool and fulled into felt as well as type colorings mixed with colored and white wool. It is pointed out, that the afterchrome procedure usually produces the fastest colorings, but that following the previous mordant or in certain cases following the chromate process, dyeing may also take place. To brighten covered tones, full— and chrome fast acid dyestuffs are recommended, while for shading of the finished colorings special attention is drawn to the well known Neolean dyestuffs, because in this case another afterchrome may be avoided.

The various dyeing processes are minutely described, as well as a recipe for the boiling off of defective coloring added. Explicit fastness tabulations of the chrome fast dyestuffs have been joined to the sample card.



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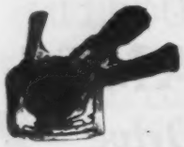

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New Roving Traverse Motion

An invention relating to a traverse motion for roving frames in cotton mills was recently patented by Samuel J. Bishop, of Spartanburg, S. C. The primary object of the invention is to provide a traverse motion of this type wherein the working parts will be reduced to a minimum, to simplify the operation of the device.

Another object of the invention is to provide a traverse motion which may be adjusted for full length travel of rolls and double travel on end of rolls in keeping with the reversing or lifting shaft, thus insuring even wear over the entire length of the rolls of the frames of the cotton mill.

By referring to the sketches and a few of the details of construction, the advantages claimed for this new type traverse motion can be seen.

A fragmental elevational view is shown in Fig. 1. By referring to this sketch, it will be seen that the cam shaft carries an eccentric that includes an eccentric band *A*, to which the cam rod is connected, so

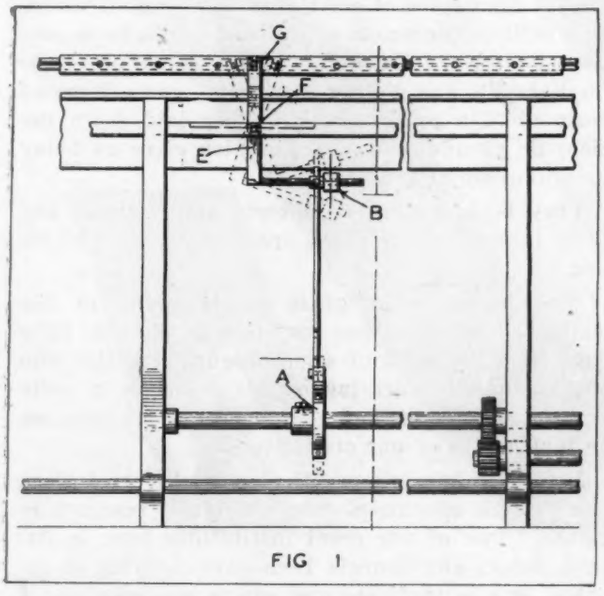


FIG 1

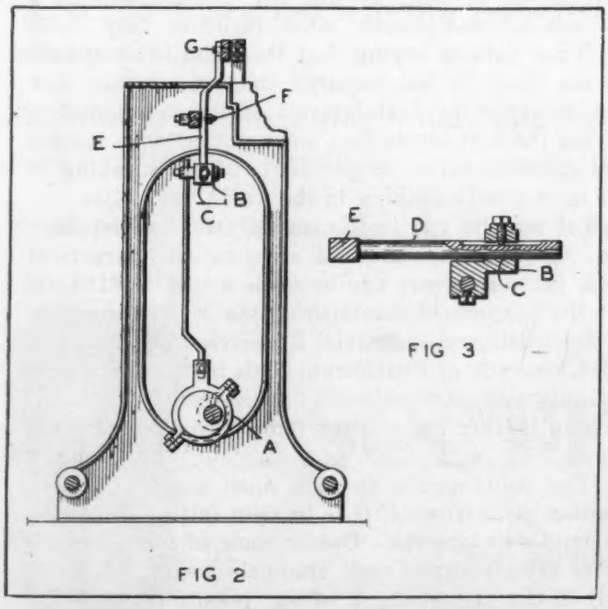
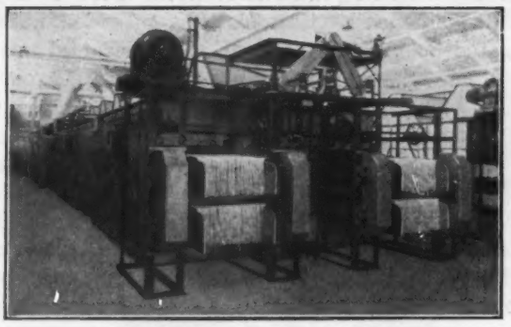


FIG 2

FIG 3

"Hurricane" Drying and Conditioning Machines



Showing installation at American Glanzstoff Corp. (Manufacturers of Glanzstoff Rayon Yarns)

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that movement of the band *A* will will produce a relative movement of the cam rod to operate the rocker arm of the traverse motion.

The cam rod extends through the extension of the connection block *B*, which is shown more clearly in Fig. 2. This connecting block is provided with an elongated opening *C* in which the horizontal arm *D*, Fig. 3, moves. The arm is provided with a groove in which the reduced end of the threaded bolt moves, thus permitting movement of the connection block *B* longitudinally along this arm when the mechanism is in motion.

Extending upwardly from one end of the horizontal arm *D*, is the rocker arm *E*, Fig. 1, which is pivotally mounted on the frame at *F;* the upper end of the rocker arm is provided with a notch to receive the pin *G* extending laterally from the frame with which the device is used, so that as the cam rod is moved vertically, the rocker arm *E* will be swung to position as shown by the dotted lines in Fig. 1, thus transmitting the motion to the frame.

Should it be desired to increase or decrease the movement of the rocker arm, the cam may be adjusted along the cam shaft, which movement will result in the connecting block *B* automatically adjusting itself to vary the movement of the frame with which the device is connected.

Fisher Purchases Apex Company.

It was recently announced by the Fisher Governor Company of Marshalltown, Iowa, that they had purchased the Apex Regulator Company of Decatur, Illinois. The products manufactured by the Apex Company are closely allied with those of the purchasing company, and consist of a very complete line of automatic pressure control specialties for steam, water, air, and the oil and gas industry. The machinery of the Apex Company will be moved to Marshalltown during the latter part of July or early in August.

Large Order Placed by Toledo Company.

One of the largest orders for industrial scales in the South was recently secured by the Toledo Scale Company, Toledo, Ohio, for a complete weight control system in the plant of the American Chatillon Corporation at Rome, Ga. Joe Reed, district manager, Atlanta, Ga., handled the sale and installation. The order involved 32 scales.

Southern Supply House Adds New Service.

According to announcements by the well known Textile Mill Supply Company of Charlotte, N. C., the company is now in a position to serve the needs of its many customers in pressure control devices, as they have taken on the Mason Regulator Line.

New Bulletin Issued.

The Superheater Company, 17 East 42nd Street, New York, has recently issued Bulletin T-19, "The Elesco Multiple-loop, Single-pass Superheater." The bulletin illustrates how the same basic principle—the multiple-loop, single-pass arrangement (an exclusive Elesco development)—applies to all Elesco superheaters for stationary boilers. Copies will gladly be sent to anyone by request.

Square D Company Makes An Announcement.

A new combination starter for automatic electric motor control, possessing exclusive features, according to a recent announcement, has been placed on the market by the Square D. Company. This firm, with factories at Detroit, Mich., Milwaukee, Wis., and Peru, Ind., as a result of its recent alliance with the Industrial Controller Co., of Milwaukee, now manufactures a complete line of electrical equipment.

Southern Textiles and Research.

(*Continued from page* 1245.)

us. Now, nothing is more practical than the dollar, and I venture to say that very few of you do not in the course of a year receive a considerable income from the stocks or bonds of some electrical power company. Utilities as investments are popular nowadays.

Well, you say, what of it: Only this, that the whole fabric of electricity which touches your shop, your home and your pocketbook was evolved in fifty years from the groundwork of research scientists. When we think of the development of electricity we commonly think of Steinmetz, the mathematical inventor, and of Edison, the practical inventor, and their work is marvelous. I worked for some years in the electrical field and have had occasion to study the early history of this science and I find there two names engraved, "Maxwell and "Faraday"—Englishmen—the men who blazed the way, who dug out the facts of the nature of electricity and without whose work neither Steinmetz or Edison could have progressed a step. Maxwell was a college professor and Faraday was a drug clerk who was afterword promoted to a professorship. They laid down the scientific groundwork in 1865 which gives us today our billion dollar industry.

They both worked in poverty and without any public interest and with no prospect of material regard.

Who knows what great enlargements in the wealth and power of man may flow in the next fifty years from the work of some obscure scientist who today is quietly carrying on his research in spite of meager resources and equipment? Such men are the real heroes of our civilization.

I want to say one practical word before I close for scientific education and particularly research in science. Two of our great institutions here in Atlanta, Emory and Georgia Tech—are carrying on research, one in medicine and one in engineering. I am not advised exactly what facilities they have, yet I am safe in saying that these facilities should be ten times or one hundred times what they now are, to serve the best interest of the South and in saying the best interests, I mean not only the mental and spiritual values to accrue, but I am speaking of the most practical thing in the world, the dollar.

Let me cite you to the case of Mr. Andrew Mellon. He is seldom accused of being an impractical man, yet some years ago he made a gift of $100,000 for the purpose of establishing the Mellon Institute of Scientific and Industrial Research Department of the University of Pittsburgh. This institution is now not only a focus of scientific achievement, but is enriching further the wealthy industries of Pennsylvania.

The South needs, in fact, must eventually have similar institutions if it is to keep faith with its industrial development. Unless some of our prosperity is diverted into such channels we must finally fail of the utmost reach of our possibilities.

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Willcox & Gibbs has established high standards in sewing machines. It is a policy of practical value. Through the use of these machines, manufacturers of men's and women's Rayon undergarments add extra salability to their production.

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Write our Home Office for samples made on these machines, or submit your own fabrics for sample purposes.

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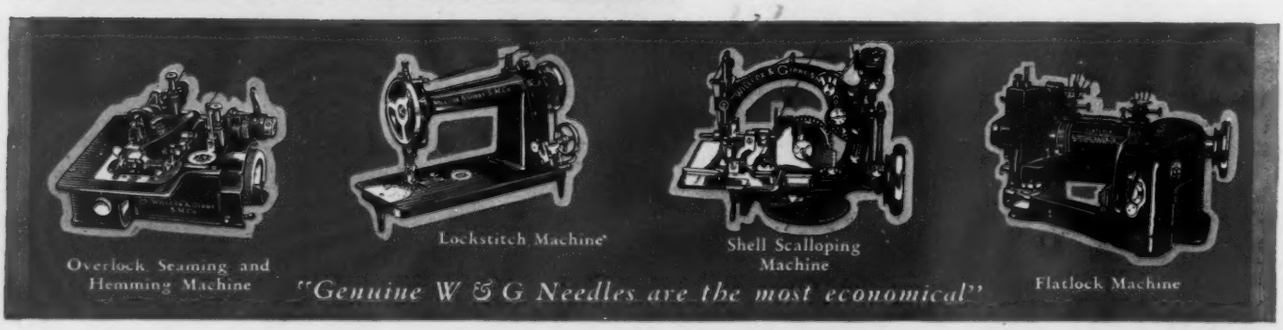
Overlock Seaming and Hemming Machine
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"Genuine W & G Needles are the most economical"

Size *and* Location *of* Plants *in the* FULL-FASHIONED INDUSTRY

By George W. Taylor

HERE is a "statistical survey" that is *not* difficult to digest, and it contains accurate information of absorbing interest to full-fashioned manufacturers and others in the knitting industry. It reveals the location of the full-fashioned machines in this country; pointing out also the number of small, medium-sized and large plants engaged in this work. It also shows the percentage of machines in each size of mill. We recommend it as easy to read and as informing and interesting material.—THE EDITOR.

VARIATION IN THE SIZE of establishments between industries have always been of interest as an indication of the nature of the industrial process. In considering the size of establishments prevailing in a given industry, formidable obstacles are encountered. After developing a clear understanding of what is meant by "establishment," the difficult choice of an adequate measure of size must be made.

In the present analysis, the term establishment will be used to represent an industrial plant, or a mill, as an entity, regardless of whether or not it is owned jointly with other like plants. This usage appears to offer less disadvantages than if we considered an establishment as being those plants having common ownership. In some cases, it would be difficult to secure data regarding ownership of several plants by one interest, while the other cases data of plants in different districts operating under dissimilar conditions would be combined. Our "establishment" has its defect in that, in at least several instances, "contiguous factories" under identical management will be considered as separate units.

The choice of a proper measure of size presents a more difficult problem. The Census Bureau in its collection of data pertaining to size of establishment emphasizes four measures—capitalization, value of products or value added by manufacture, number of wage earners per establishment, and physical product per establishment.

Unfortunately, these measures are not available for this study. As the Census Bureau has not differentiated in its data of size of establishment between the full-fashioned and the seamless hosiery industries, another source of information becomes necessary.

TABLE 1.
NUMBER OF ESTABLISHMENTS OPERATING INDICATED NUMBERS OF MACHINES IN THE FULL-FASHIONED HOSIERY INDUSTRY OF THE UNITED STATES, AS OF JANUARY 1, 1929.

Number of machines per establishment.

	12 or less	13-25	26-50	51-100	101-200	201-300	301-400	401-500	Over 800	TOTAL
New Jersey ...	8	5	6	4	2	1				26
New York	2	4	1	2	1					10
Middle West* .	3	5	5		1	2	2			18
New England**	2	5	6	2						15
South***	19	11	7	4						41
Penna.**** ...	22	15	11	9	4			1	1	63
Philadelphia ..	20	22	17	9	8	2		1		79
California			1	1						2
TOTAL	76	67	54	31	16	5	2	2	1	254
% of Total ...	30%	26.4	21.2	12.2	6.3	1.9	.8	.8	.4	100%
Cumulative % of total	30%	56.4	77.6	89.8	96.1	98.0	98.8	99.6		100%

*Illinois, Indiana, Iowa, Michigan, Minnesota and Wisconsin.
**Connecticut, New Hampshire and Massachusetts.
***Alabama, Georgia, Kentucky, Louisiana, Tennessee, Texas, Virginia and North Carolina.
****Pennsylvania with the exception of Philadelphia.

Remembering that it is impossible to determine a wholly satisfactory measure of size of establishment, one chooses that measure for each industry that is practicable and workable, and which seems to be as nearly ideal as possible. In the full-fashioned hosiery industry, this measure seems to be the *knitting machines per establishment*. It is not our intention to maintain that this is an ideal measure. The number of sections per knitting machine varies from 18 to 30. However, since about 40 per cent of all full-fashioned knitting machines have 18 sections each, 42 per cent have 20 sections and nearly 17 per cent have 24 sections, the probability of error is not so great as would at first appear. The machine measure, however, fails to account for the greater importance in productivity of those plants engaged in the double shift method of operation. In this study we have recognized this situation by considering the ratio of leggers to footers prevailing in each size of establishment. (1) The number of machines alone does not measure even the potential capacity. If an establishhas twelve leggers and footers, it is restricted to one shift (2) because the number of footers is the 'bottle-neck" limiting the operation of the leggers. Another establishment having but 15 machines, but with nine leggers and six footers, would be in a position to run two shifts on the leggers, with a potential capacity equivalent to 24 machines on single shift.

Our procedure will, therefore, afford but a rough approximation of the size of establishments. Howev-

(1) If single shift prevails, the ratio would tend to be 3 to 1, whereas double shift operation of leggers would result in a 2 to 1 ratio.

(2) Unless both leggers and footers are operated two shifts. This is unusual because of the legal impossibility (in some quarters) of having the women toppers work at night.

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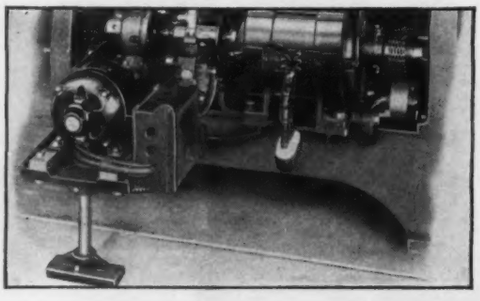

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FULL FASHIONED HOSIERY MACHINE

er, by considering the ratio of leggers to footers in conjunction with the number of machines, the sharpness of our groupings into size differences will be more pronounced.

Industries grow in two ways—vertically and horizontally. A vertical growth in a full-fashioned hosiery plant would involve the incorporation of silk preparing and finishing departments with the knitting department. It might even be extended to include sericulture, and has been accomplished by an assumption of the marketing process. In measuring size of establishment by number of knitting machines, an estimate of vertical growth is not contemplated. However, horizontal expansion of full-fashioned hosiery plants might be defined as an increase in the number of knitting machines per establishment. It is the size of establishments that has resulted from horizontal expansion in which our interest lies.

Having clearly in mind, the limitations that have been outlined, we may apply our measure of knitting machines per establishment to study the size of full-fashioned hosiery plants.

The data here used have been secured from and checked with several sources. A questionnaire to all full-fashioned hosiery manufacturers elicited replies covering about 30 per cent of total equipment. With other data we thus compiled a record of the machinery in 254 establishments of the total of 263 in the United States as of January 1, 1929. The total number of machines so recorded were 11,800. It was estimated that 204 machines were housed in the mills of which no definite record was secured. It appears, therefore, that on January 1, 1929, there were 12,004 full-fashioned hosiery knitting machines in the United States, of which we have located 11,800 or over 98 per cent. While it would have been desirable to consider these machines on the basis of total number of sections per establishment, the data regarding sections was at hand for about 70 per cent of all machines.

From the data from 254 mills, there has been constructed a table showing the frequency of the mills having different numbers of machines per establishment. This has been done for the principal districts of the country and for the entire United States.

The frequency classes need some comment. The smallest class is for the number of mills each having twelve machines or less. While some establishments have as few as four machines, most mills in the industry have more than one unit of equipment. We have, therefore, considered an establishment with twelve machines or less as our smallest group. It must be borne in mind that the intervals do not increase by twelve machines, since that would give a too minute classification. In fact, for mills having 100 machines or over, classification is by intervals of hundreds of machines.

It seems that this classification gives an adequate picture of the size of establishments in this industry.

In table 1, there is presented the distribution of mills by numbers of machines per establishment:

This table shows very forcibly that a large number of mills in the full-fashioned hosiery industry operate with comparatively few machines. We have already noted that but few mills operate with only one unit of machinery. However, 76 establishments or 30 per cent of the total have 12 machines or less, which means that these plants operate four units, or at most five, if the leggers operate double shift. Furthermore, over 26 per cent of all plants operate from 13 to 25 machines, so that over 56 per cent of all establishments have 25 machines or less. As most of the establishments are grouped in the lower interval classes, we would expect but few concerns to be large in size. Actually, only slightly over ten per cent of all establishments have over 100 knitting machines each.

Two mills have between 300 and 400, and two have between 400 and 500 machines. Then comes a gap, until we find one establishment with over 800 machines. The table shows that the full-fashioned hosiery industry is one with many small concerns, a fair representation of medium sized establishments which have from 26 to 200 machines (these companies comprise 39.7 per cent of all mills) and three very large concerns.

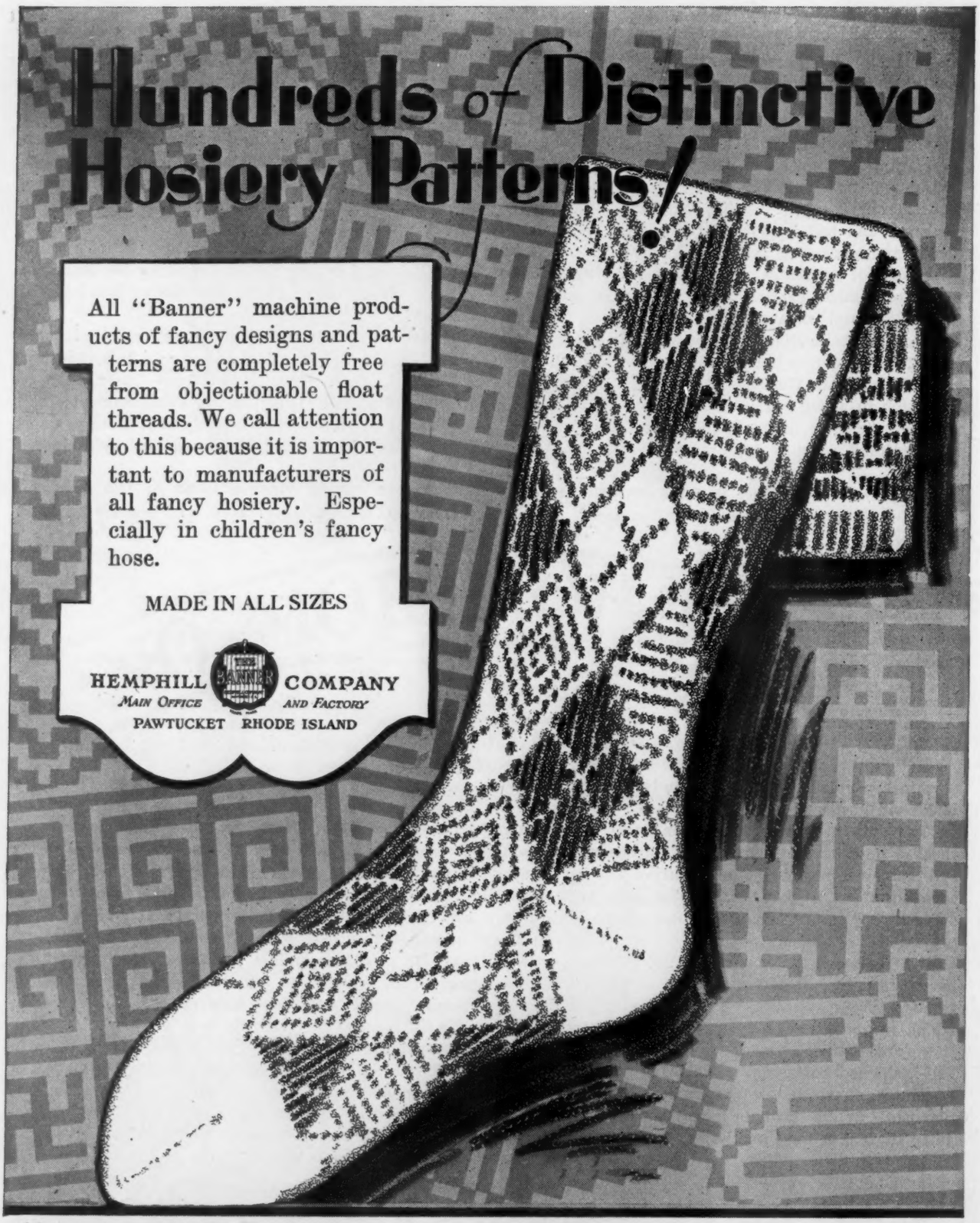
In speaking of establishments of under 25 ma-

TABLE 2.
TOTAL MACHINES IN EACH SIZE OF ESTABLISHMENT, UNITED STATES—FIRST QUARTER OF 1929.

	Number of machines in each group.																
	12 or under		13 to 25		26 to 50		51 to 100		101 to 200		201 to 300		301 to 400		401 to 500		Over 800		TOTAL
	L	F	L	F	L	F	L	F	L	F	L	F	L	F	L	F	L	F	
								74*											
New Jersey	41	19	69	24	151	52	155	43	230	68	173	54							1153
New York	10	5	57	19	27	6	103	33	85	23									368
Middle West	9	3	69	27	136	54			117	65	359	95	511	170					1615
New England	12	5	70	25	153	57	107	38											467
South	91	44	135	66	173	77	152	81											819
Pennsylvania	113	53	190	81	268	111	477	177	436	140					322	108	651	195	3322
				25*								255*							
Philadelphia	117	53	294	109	429	143	534	160	888	291	208	54			283	122			3965
California					27	12	37	15											91
TOTALS	393	182	884	351	1364	512	1565	547	1756	587	740	203	511	170	605	230	651	195	11800
			25*				74*				255*								
Machines in each group	575		1260		1876		2186		2343		1198		681		835		846		11800
% of total machines	4.8		10.7		15.9		18.5		19.9		10.2		5.7		7.1		7.2		100.0
Cumulative % of total machines	4.8		15.5		31.4		49.9		69.8		80.0		85.7		92.8		100		
Ratio of L to F	2.16		2.52		2.66		2.86		2.99		3.64		3.0		2.63		3.4		

*No information available as to number of leggers and of footers.

The survey from which this article is abstracted was prepared under the auspices of the industrial research department of the Wharton School of Finance and Commerce, University of Pennsylvania, Philadelphia, Pa. The author, who is a member of the staff of this department, is also professor of Economics at Albright College, Reading, Pa. Mr. Taylor is also author of a separate study, a book entitled "Significant Post-War Changes in the Full-Fashioned Hosiery Industry," copies of which may be secured through COTTON'S Book Department.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Commercial Bank Bldg., High Point, N. C

TABLE 2
LOCATION OF FULL-FASHIONED KNITTING MACHINES, UNITED STATES—January 1, 1929.

	Number of Leggers	Number of Footers	Not Classified	Total machines	Per cent of machines	Ratio of leggers to footers
New Jersey	819	260	74	1153	9.8	3.15
New York	282	86		368	3.0	3.28
Middle West	1201	414		1615	13.7	2.90
New England	342	125		467	4.0	2.70
South	551	268		819	6.9	2.06
Pennsylvania	2457	865		3322	28.2	2.84
Philadelphia	2753	932	280	3965	33.6	2.95
California	64	27		91	.8	2.37
TOTAL	8469	2977	354	11800	100.0	2.84

chines as small concerns, we must remember that a large capital investment is required even for them. They are small only when compared with other full-fashioned establishments. Each unit of full-fashioned knitting machines requires an investment of approximately $50,000, four machines erected costing between $30,000 and $40,000. A concern beginning the manufacture of full-fashioned hosiery must have considerable capital at its disposal.

While many concerns are small in size, we cannot, therefore, consider this industry as one in which operations can be easily started. It is more probably an industry of numerous small establishments because of the heavy capital requirements and the specialized skill demanded for even a small factory. Very few plants have managed to expand to over 100 machines. This fact may be explained by the comparative youth of the industry. Most of the mills now operating began since 1919, and many started since 1925.

Further consideration of Table 1 shows a concentration of mills in Philadelphia in particular, and in Pennsylvania in general. That state has 142 of the total of 254 that we are considering. Most of the Pennsylvania establishments are located in Philadelphia. Moreover, most of the large establishments are in Pennsylvania. Of 26 mills in the United States having over 100 machines, 17 are in Pennsylvania. In point of size, the Middle West has the next largest number of mills having over 100 machines, while New Jersey and New York each have a few mills of the large class. Thus, only in the longer established communities are the largest factories in operation. The southern states, where new mills have shown a recent tendency to increase, have no mills of more than 100 machines (as of January 1st, 1929) a large percentage of factories in this section house 12 machines or less.

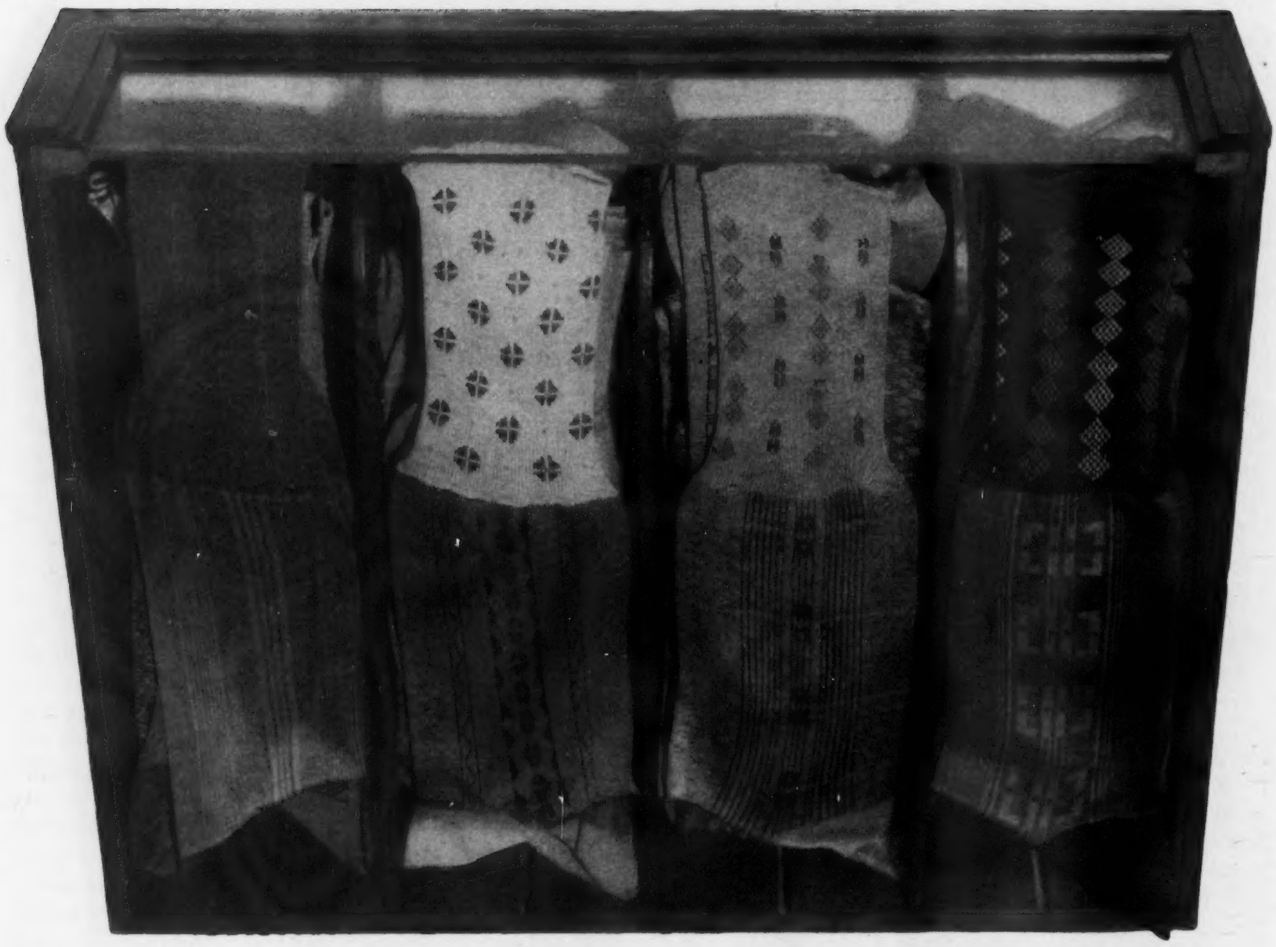
Our discussion has, so far, brought out the fact that the full-fashioned hosiery industry is predominantly one of small establishments. It is necessary to keep in mind, however, that this industry does not have a large number of establishments, and even the small firms are comparatively stable. The presence of a large number of small mills in an industry often means that an influx of new mills occurs when demand for their product is great, and an outflow of mills when product demand falls off. Such disorganization of production is not characteristic of the full-fashioned hosiery industry since it is difficult to begin operations on even a small scale. Moreover, it is impossible to use the knitting machines for purposes other than manufacturing full-fashioned hosiery. In other words, the fixed investment is high, and the equipment is not flexible in its uses.

While we have seen that the small establishment is numerous in the full-fashioned hosiery industry, we have not shown the importance in production of the different size establishments. We need to know what percentage of total machinery is in the small plant, and what percentage is in the large plant. It may be that the ten per cent of the large establishments house, say 50 per cent of the equipment. In order to study this question, Table 2 has been prepared. It lists the number of machines in all factories having 12 machines or less, 13 to 25, etc. That we may note any tendency for any certain sized establishment to operate double shift, we have divided the total machines two leggers and footers. Details for this classification are available for all but three establishments for which the machinery is listed as a total only.

The data in Table 2 amplifies our previous conclusions and more adequately treat the question of the importance in production of the different size establishments. We note that while 30 per cent of all establishments have 12 machines or less, the number of machines in this group constitutes less than five per cent of the total machinery. Furthermore, while 56 per cent of the establishments have less than 25 machines, these concerns have but 15.5 per cent of all machines. We cannot say that the small establishment dominates the full-fashioned hosiery industry merely because it is numerous. The ten per cent of the establishments having over 100 machines each, contain just about 50 per cent of total machines in the industry. Accordingly, these concerns are much more important than their numbers would indicate. It must be borne in mind, however, that there is a large supply of machinery held in mills having from 26 to 100 machines, almost 35 per cent being in this class of mills.

The situation may be more clearly apprehended if we consider establishments of less than 25 machines as small, from 26 to 100 as medium sized plants, and over 100 as large establishments. Viewed in this light, the small plants are 56.4 per cent of total mills, but they house only 15.5 per cent of all machinery. The medium sized plants are 33.4 per cent of mills, and control 34.4 per cent of total machines, while the ten per cent of the plants with over 100 machines each,

"THE SOUTH, at the close of 1928, had but seven per cent of all machines. This district, however, is forging rapidly ahead. During the first three months of 1929, an authentic report states that 433 new machines were added in the South. Thus, in this short space of time the South's full-fashioned knitting equipment has increased nearly 50 per cent. North Carolina especially has been rapidly increasing both number of mills and number of machines."



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provide 51.1 per cent of the industry's equipment.

One further matter must be considered — the question of whether or not double shifts are more prevalent in smaller mills compared to larger mills. The ratio of leggers to footers for each class of establishment is listed in Table 2. If a mill has three leggers to one fotter, it must operate single shift, unless both leggers and footers are operated double, and this latter method of operation is but rarely used. If a mill has two leggers to one footer it is probable that it is operating double shift on leggers. Accordingly, as the ratio of leggers to footers declines we may say that double shift is used to a greater extent.

The establishments having 12 machines or less have the lowest ratio. 2.16 to 1. As establishments increase in size the ratio increases until we find that establishments with over 100 knitting machines generally have three or more leggers to each footer. This may be explainable by the fact, that with a few exceptions, the large establishments are in unionized districts where the use of the double shift is discouraged. The fact that smaller establishments use double shift more frequently than do larger plants indicates that their importance in production is greater than their proportionate share of total machinery. Potentially, however, those plants now operating single shift can double their capacity by adding footers, and by their placing the leggers on double shift.

From the limited details available as to gauge and section of knitting machines, it appears that the smaller, and in most cases the newer plants, have installed finer gauge and modern equipment. The demand for sheer hosiery is in general, greater than the demand for service weight types. It may be that in running double shift, the smaller establishment is meeting a greater demand for its product. Undoubtedly, the smaller plant also sees an opportunity of reducing fixed charges by running its leggers double shift.

ON January 1st, 1929, there were practically 12,000 full-fashioned knitting machines in the United States, in 263 establishments. The information in this article is based upon a survey covering over 98 per cent of the machines installed, and therefore should represent an accurate picture of the entire industry.

In studying the size of plants, it has been necessary to make a census of all machines in operation in full-fashioned hosiery plants in the United States. The census was taken by districts in order to note any tendency of particular size establishments to be concentrated in any one area. This information was also used to study the ratio of leggers to footers by districts. The data so collected affords an excellent opportunity for arriving at an understanding of the localization of machinery. While this question is not intimately connected with size of establishments, we feel that it is concomitant data that is important enough to be considered.

Table 3 has been used to compute the number of leggers and footers in each district and the percentage of total machines in each producing area. From Table 3 it can easily be noted that 33 per cent of all machinery is located in Philadelphia, while 28.4 per cent is found in other parts of Pennsylvania. That state has within its borders, therefore, 61.4 per cent of all full-fashioned hosiery knitting machines. The next largest area based on number of machines in the district is the Middle West with nearly 14 per cent of the total, while New Jersey, especially the northern portion of the state, ranks high.

The South, at the close of 1928, had but seven per cent of all machines. This district, however, is forging rapidly ahead. During the first three months of 1929, an authentic report states that 433 new machines were added in the South. Thus, in this short space of time the South's full-fashioned knitting equipment has increased nearly 50 per cent. North Carolina especially has been rapidly increasing both number of mills and number of machines. This table also shows that in the South, the double shift is more prevalent than in other parts of the country. In southern mills, the ratio of leggers to footers is but slightly over 2 to 1, as compared to New Jersey and New York where the ratio is considerably over 3 to 1.

AT the first of this year, 30 per cent of the full-fashioned mills in this country operated 12 machines or less each; but contained only 4.8 per cent of the number of machines in the country. There were 77.6 per cent of the mills with less than 50 machines each, containing 31.4 per cent of the machines. Half the machines in the country, or 49.9 per cent, were in mills of less than 100 machines, 89.8 per cent of the total mills operating less than this number of machines each. However, the other 50 per cent of the machines were located in the remaining 10.2 per cent of the mills.

Knitting Mill Notes

(*See also page* 1321.)

Caldwell and Co., Nashville, Tenn., recently purchased capital stock of Cooper Wells & Co., which company had a full-fashioned silk hosiery plant at Decatur, Ala., and a seamles hosiery plant at St. Joseph, Mich., for account of interests which will be identified with Cadet Hosiery Co., Philadelphia, Pa., and with Caldwell and Co. Business will be conducted under name of Cooper Wells.

Bids have been taken on general contract for a one-story brick and steel addition by the Tohicken Hosiery Co., Inc., Quakertown, Pa. The addition is to be 68x135 ft., and will cost close to $30,000, with equipment. James Rapp, Richlandtown, Pa., is architect.

The building of a very substantial addition to their present plant is being considered by the Butterfly Hosiery Co., Ltd., Drummondville, Que.

Ray Hosiery Mills, Inc., formerly of Asheville, N. C., are now located at Burnsville, N. C.,

A shipment consisting of 15 carloads of machinery is being made from Bridgeport, Pa., to H. K. Regar & Sons, Inc., at Anniston, Ala. The lot includes 310 seamless hosiery machines, making a total of 500 machines to be installed in the plant. Close to 300 more operatives will also be taken on. The company manufactures special and standard lines of hosiery.

Renfro Hosiery Mills, Mount Airy, N. C., recently purchased 20 Fidelity multi-design ribbers. These have been added to their equipment for producing infants' hose.

A History *of* Hosiery Inspection

By Edward R. Ammon

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PART TWO.

THIS is the second of a series of articles on "The History of Hosiery Inspection," by Edward R. Ammon. The first article appeared in the August number. Subsequent installments will appear in later issues.—The Editor.
MS. 4866.

NATURALLY as the manufacture of hosiery on machines spread through England, Germany and France, some of those persecuted in these countries for religious reasons were knitters.

As a large number of the emigrants to the new world were those fleeing from religious persecution, knitters with their machines found their way to America at a very early date.

Of course these machines were not the ponderous iron machines of today but of a very simple type with wooden frames instead instead of iron.

The Mennonites Made Stockings at Home.

Also the early machines had only one or two heads, or sections, as the many section machine only commenced to be used in comparatively recent times when power, both water and steam, was developed and applied to mechanical devices.

As early as 1689 some Mennonites started hand frames in Germantown at their homes and made stockings, the same as was continued in Europe until recently. Work was still done in English homes without power very generally, as late as fifty years ago.

Some approach to centralization was had when master workmen controlled the output of their neighbor workers, but it remained for the application of power to the knitting machines to start the factory system as we know it.

In 1790, more than two hundred years after the invention of the knitting machine, several small towns in Connecticut, where water power had been developed, had small mills manufacturing hosiery.

From this time on, the factory system of manufacturing hosiery by power spread and by 1822, the town of Ipswich, in Massachusetts, commenced to be famed for the manufacture of hosiery.

For some reason which does not seem to be clear, at the present time, the machinery used to start the Ipswich Mills was brought over from England secretly. This item merely hints at the romance connected with the growth of the industry.

Manufacturing hosiery in Ipswich prospered until one of the largest and most complete hosiery mills in the world was located there. Today, after 107 years, it is still an important hosiery manufacturing center.

Strange to say, the original machinery was of the flat type, that made fashioned hosiery. When the invention of seamless hosiery machinery was brought to a high standard of perfection, practically all of the tremendous volume of hosiery manufactured in Ipswich was of the seamless type.

Today, history is repeating itself and fashioned hosiery has again begun to be manufactured in this locality.

With the inefficient methods of hosiery inspection prevailing, doesn't it speak worlds of praise for the management of the mills of Ipswich that their product has remained in the limelight for over a hundred years?

(This is the second article of a series. The next will appear in an early issue.—The Editor.)

Studying Sales and Distribution

For the past six years the Domestic Commerce Division of the United States Bureau of Foreign and Domestic Commerce has been making an intensive study looking toward the elimination of waste in marketing and distribution, it was recently announced by C. Grant Isaacs, district manager of the Carolinas office of the Bureau, in Charlotte, N. C.

The results of these studies are published from time in pamphlet form, and each week there is issued a pamphlet detailing the latest results of studies in this field by both Governmental and non-Governmental agencies. This weekly, entitled "Domestic Commerce", is mailed without charge to business men and firms who are interested in it.

A number of organizations in North and South Carolina have availed themselves of this service for the benefit of their members, said Mr. Isaacs, the latest being the Hardware Association of the Carolinas, of which Arthur Craig of Charlotte, is secretary-treasurer.

Since April nearly a thousand Carolina business firms have been added to the Domestic Commerce" mailing list, indicating a keen desire on the part of the Carolina business man to keep his house in order and up to the minute in all matters of modern merchandising.

This service of the Bureau of Foreign and Domestic Commerce is not confined solely to members of commercial or trade organizations, but may be availed of by any individual who wishes to use it. Mr. Isaacs has expressed a willingness and pleasure to coopreate with all business men in an endeavor to assist them to operate their business more efficiently and economically.

Some of the organizations that are regularly using this service of the Carolinas office of the United States Bureau of Foreign & Domestic Commerce, 1207 First National Bank Building, Charlotte, are the North Carolina Merchants Association and the forty-one local associations in the state; The Hardware Association of the Carolinas, and others.

AROUND THE SEASONS WITH TORRINGTON LATCH NEEDLES

SEPTEMBER ALMANAK

1929 Sept. hath 30 days, 9th mo.

Now Autumn's golden stores behold
With fruit each tree is crown'd;
Peaches in suits of red and gold
Each twig bows toward the ground.

FARMER'S ALMANAK 1819

AS summer fades the shops bloom forth with a profusion of knitwear designs. The public throng the aisles, their preferences marked by a desire for the finest in workmanship.

Torrington Latch Needles enable you to supply this better, more profitable demand. They are good needles, each feature typifying the care and skill of Torrington manufacture.

Torrington Latch Needles contribute their quota to the excellence of your production. Leading knitters the world over prefer them.

Torrington Full Fashioned Needles are finished with that smooth, glassy surface which is typical of Torrington Needle products.

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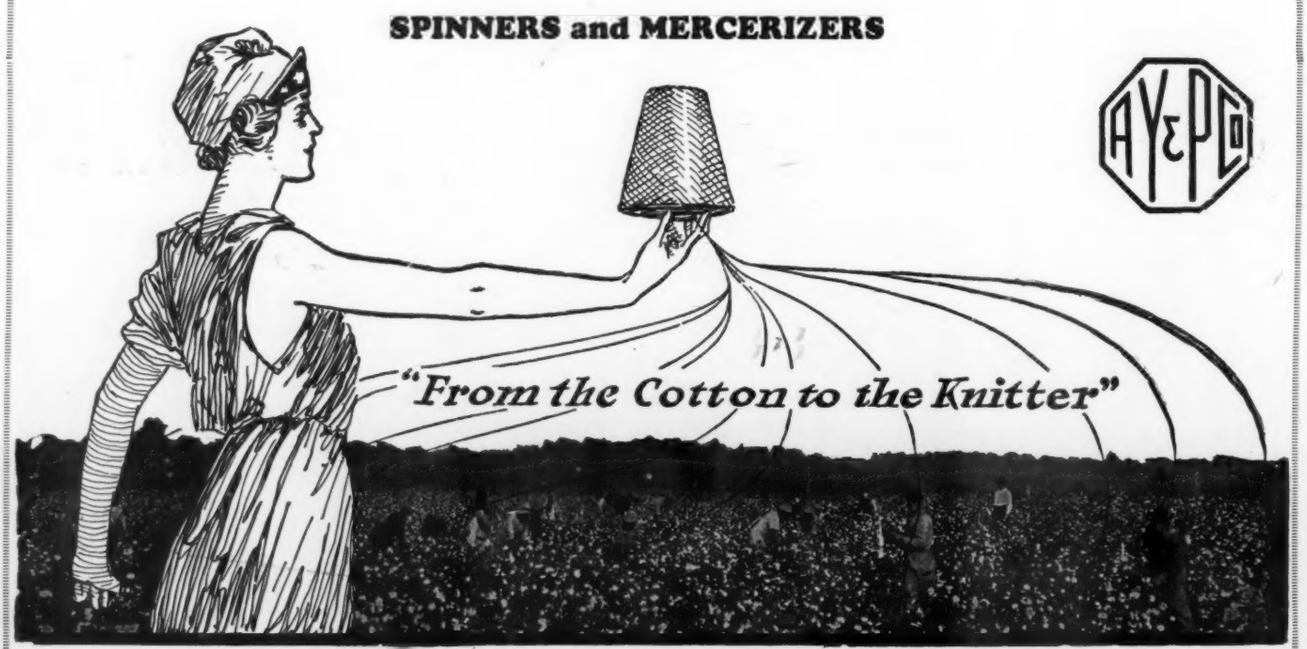
SPINNERS and MERCERIZERS



OLD KNITTER'S son has had a strike, and in writing his regular letter to his Dad, told him how he "settled" it, but the old gentleman didn't agree with his methods, and offers the young fellow some advice this month. This is the fourth exchange of letters we have published, and another will appear soon. If you have a subject you want OLD KNITTER to discuss, write him in care of COTTON.

THE EDITOR.

DEAR DAD:

The reason I have not written you for several days is because I have been too busy breaking in a new crew of boarders.

I had a little strike in my boarding room the first of the month. I did not write you about it, as I knew you would be worried. Therefore, I waited until I got the matter settled before writing you.

The trouble started over a new style which we brought out. The only difference in the new style was a silk hem and French heel. It boards just as well as the old number, but I had two old boarders whose disposition was to complain about everything, so they decided they were going to have more money for boarding the new numbers. Instead of taking the matter up with me, they organized a strike. When I was least expecting any trouble of this kind, they marched into my office and the head man said: "We have decided that it is worth more money to board that new style and unless it is forthcoming we quit."

I replied, "Gentlemen, I learned to board stockings when I was so little I had to stand on a box to reach the toe of the board, and it will be a real pleasure to me to teach some honest loyal countrymen your jobs. How many of you want your time?"

About half of them took their time and the others went back to work. I put on a crew of learners and have them going fine. I have won a complete victory, for it has done much toward stamping out some of the dissatisfaction around the plant. Don't you think I handled the situation correctly?

At what I am paying for boarding, the boarders have been making more than they can make at the other mills here. Therefore, I can't see that there was any excuse for their conduct.

I have written too much already about this trivial affair, and, as it is growing late, I will ring off.

Write me when you can and give me all of the news of what's going on there.

With best love to all, I am

YOUR DEVOTED SON.

DEAR SON:

Your letter relative to the boarder strike has given me much concern. You speak of it as a trivial affair, when in reality it is portentious in its character. You say you have won a complete victory, and it has done much toward stamping out some of the dissatisfaction around the plant. I would not say that you have won a complete victory. You have gained a temporary advantage, but you must maintain this advantage permanently to have won a victory. You cannot stamp out dissatisfaction and disloyalty by destructive methods. This can only be done by constructive methods.

You ask the question, "Don't you think I handled the situation correctly?" My first impulse is to answer yes, and congratulate you on your ability to teach some honest loyal countrymen how to board stockings, but suppose there had been no honest loyal countrymen available? What would you have done them? I think it would have been better for you to have said: "Gentlemen, it seems that you have given this question more consideration than I have had opportunity to give it. Now if you will give me time to investigate your complaint, I assure you that I will treat you fairly.

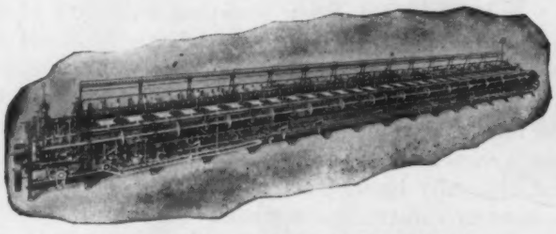
Then you should have gone to the dyehouse and issued orders not to dye any more of the new style until further ordered.

After about two days you should have sent for the head man of the strike to come to your office, and said to him: "John, I have investigated your complaint, and I believe you are wrong in your conclusions, and I want to show you where you are wrong. I will dye a batch of the new style today and I want to take 12 of your boards and board the new style while you take the other 12 and board the old style, and I will show you how to take off a set every time you do."

John would have agreed, and after boarding with him for 30 minutes, you should have said: "John finish this batch and if your production is less, I will make it up." You should then have stayed with

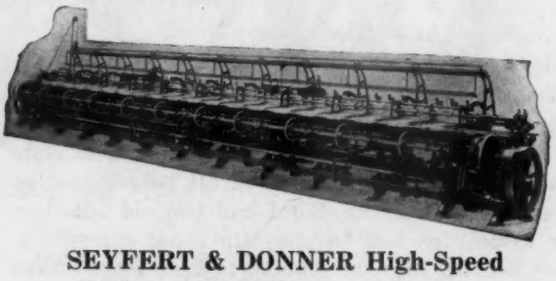
DURABILITY

DURABILITY is one of the first requisites demanded in Machines. Without durability and the ability to stand up under constant wear and tear, no Machine is satisfactory. The Hosiery Machines pictured and described below, for which ROBERT REINER, INCORPORATED, is the sole representative in America and Canada, possess to a remarkable degree the characteristic of durability. They are solidly and sturdily constructed and can be relied upon for long and hard service.



EINSIEDEL "REINER" High-Speed Full-Fashioned Hosiery Machine

Operating with tremendous speed and turning out the highest quality Hosiery, combined with almost unbelievable reliability, are the reasons why this Hosiery Machine occupies a position of such unchallenged popularity all over the world. Novel effects in clock and lace designs and in fancy stripes can be obtained with the Machine, and it can be secured in any number of sections and in any gauge. It will produce 65 full courses per minute with the highest percentage of firsts and the lowest number of seconds. A large number of the most prominent Hosiery Manufacturers in America are using this dependable Machine—fair proof of the satisfaction it gives.



SEYFERT & DONNER High-Speed Full-Fashioned Hosiery Machine

This Machine is the product of the largest Flat-Knitting Hosiery Machine Manufacturers in Germany, and is enjoying an increasing popularity with Hosiery producers. An entirely new Slur Cock and Jack Head, perfected after long laborious experiment, enables the Machine to attain a speed up to 72 full courses per minute, and also assures a perfectly uniform stitch. Oil rings are used in all main bearings, and the Machine can be delivered in any desirable number of sections and in any gauge. With this Machine you can depend upon the highest quality of production at the lowest possible upkeep cost.

You are cordially invited to visit our Factory Show Rooms in Weehawken, where you can see the EINSIEDEL "REINER" and the SEYFERT & DONNER High-Speed Full-Fashioned Hosiery Machines in operation. You will be amazed when you see for yourself what these remarkable machines can accomplish.

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him until he finished.

Then, if on the next day you had dyed another batch and divided it among four boarders, helping all of them until they had finished the lot, by putting over this plan, the chances are you would have greatly increased their appraisal of your ability and they would have turned out to be your staunchest supporters.

I see in this incident some mistakes you made. In the first place, if you had in your boarding room a man with a temperament for leading strikes, you should have discovered it and dismissed him before this occasion.

In the next place, you should not have attempted to put a new style into large volume production, but should have worked it in gradually with sample lots, and assigned the lots to certain boarders who were dependable. If anyone met with difficulty, assist him to overcome his trouble, and let the boarding room foreman board a round with him occasionally to keep his normal production up.

From what I understand your boarders have been making, there is something wrong there. At the rate you are paying they should make more.

Finally, I would say if you had known your men better and they had known you better, upon having a complaint, you would have heard from the individual in a friendly spirit rather than having the group make collective threats.

Another thing, don't be content with what your help is earning, even though it is in excess of the prevailing wages in your section, until you bring every operative up to the highest efficiency of which they are capable. Get new ideas; study new methods; try new systems; and, above all, acquire the faculty of imparting to your help the knowledge you have gained. In selecting help, get the best; get rid of the drones, for a poor hitter brings down the team's batting average.

I trust this experience will spur you to greater efforts to do some real constructive work by removing the cause for any dissension that might exist in your plant, and that you will have no further trouble of this nature.

There is no news of special interest from home. Everything is running along smoothly. Business is holding up very good.

With love and best wishes from all the family, I remain

DAD.

Among the Knitting Mills

PLANS are fast materializing for the construction of an addition to the already extensive plant of the Jantzen Knitting Mills, Portland, Oregon. According to J. R. Dodson, treasurer of the company, another block of ground adjacent to their property has been purchased, and they intend to start work on the construction of a $60,000 building soon.

It has been announced that H. C. Aberle Co., Philadelphia, Pa., manufacturer of full-fashioned hosiery, has awarded contract to William Steele & Sons, contractors, for the erection of a concrete and steel, one-story building in that city.

The Washington Woolen Mills, Aberdeen, Wash., is installing new machinery which will enable the mill to manufacture socks. Other new machinery is to be installed in the near future.

The Everwear Hosiery Co., of Milwaukee, Wis., has formally announced the removal of their plant to Chattanooga, Tenn.

An addition is to be constructed by the Mountain City Knitting Mills, Chattanooga, Tenn., which will cost approximately $30,000. The addition is to be two stories in height, and a basement.

A hosiery mill is being planned by the Lynchburg Hosiery Mills, Lynchburg, Va.

Charles A. L. Cohn, formerly of Roanoke, Va., is at present in charge of the new Norbud Hosiery Mill just opened in Philadelphia, Pa. This is the first plant to be established by this company. Mr. Cohn states that other plants may be established, and that the present plant is equipped to manufacture full-fashioned hose.

It is reported that a hosiery mill has been started by W. R. Forrester and L. C. Watkins at Columbus, Ga. The knitting machinery was purchased from Scott & Williams, Inc.

The Cartersville Mills, Inc., Cartersville, Ga., are reported to be installing machinery to manufacture full line of rayon underwear in addition to knit goods products they have manufactured for years.

The Springthorpe Knitting Co., Mount Airy, N. C., manufacturing a line of sweaters, is reported to be starting operations. The plant is operated by Bruce Springthorpe and Sons.

With authorized capital of $250,000, the Sidney Hosiery Mills, Inc., will be in operation in Graham, N. C., by the middle of September. They will make full-fashioned hosiery and colored hosiery yarns. The company has purchased 13 Robert Reiner full-fashioned knitting machines and are installing them.

The Asheville Silk Hosiery Mills, Asheville, N. C., have started operation of several units of their knitting machinery in their new plant at Asheville.

The Golden Belt Mfg. Co., Durham, N. C., is installing 26 more full-fashioned hosiery machines, which now gives the company a total of 58 machines in operation. The operation of 93 machines by October is planned.

The Durham Hosiery Mills Inc., Durham, N.C., is reported to be considering establishing a branch manufacturing plant in Cuba. A. H. Carr is vice-president and treasurer of the mills. D. P. Carey is president of the company. Materializing of plans would involve movement of part of the present equipment of the plant to Cuba, and installation of additional new machinery in the plant at Durham.

The Richelieu Knitting Co., Milwaukee, Wis., is planning an extensive expansion program at their plant.

Melrose Hosiery Co., an interest of the Opal Hosiery Mills, Philadelphia, Pa., has awarded a general contract to C. D. Conklin, Jr., Cheltenham, Pa., for a one-story mill at Cheltenham, which will cost close to $70,000 with equipment.

K. H. Scott of Burlington, N. C., has announced that the Efland-Scott Hosiery Mill will begin operations in its new plant at Efland, N. C. The mill will operate 40 knitting machines, making a seamless men's hose.

Osborn Mills, Inc., Fall River, Mass., have voted to authorize sale of securities consisting of buildings, land and machinery. No formal vote was required to dissolve. Previous offers to purchase did not equal the bonded indebtedness of $295,000. The company makes cotton goods and was reorganized two years ago.

(*Additional Knitting Mill Notes on page* 1315.)

SCHUBERT AND SALZER

TYPE H.S.L. HIGH SPEED 65 COURSES PER MINUTE

Production!

The production records of hosiery mills using type H. S. L. machines are truly extraordinary -- not only in *quantity* but in *quality*.

This remarkable performance is due to the greater number of sections and higher running speed.

Such production saves thousands of dollars annually. A demonstration will emphatically prove this.

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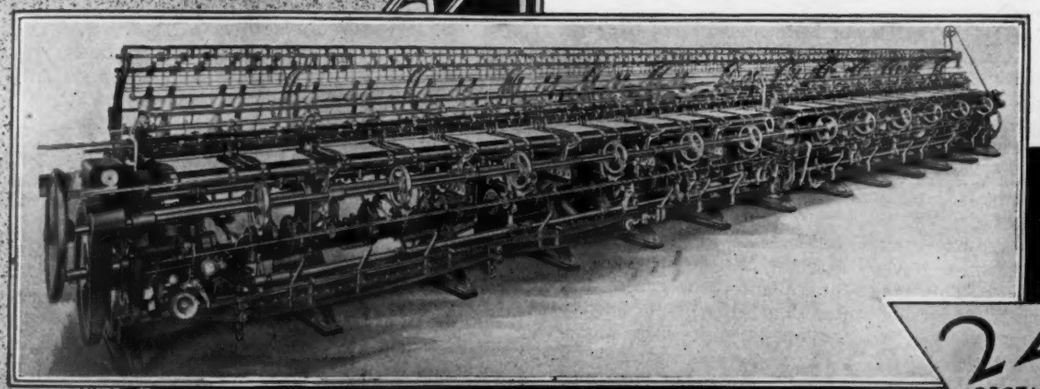


24 SECTIONS ALL GAUGES

FULL FASHIONED HOSIERY MACHINES

"Building a Fine Gauge Seamless Mill."

This man says Tom Smith was "all wet" on many of his suggestions published in COTTON recently, and gives his own ideas on the matter.

EDITOR COTTON:

For the past year or so I have been reading the series of letters published in "KNITTING KINKS" from "T. O. (N. C.)" about "Building a Fine Gauge Seamless Hosiery Mill," and, now that it is finished, I cannot keep quiet any longer. For the benefit of your readers who did not follow the series closely, I will say there were four of the articles, appearing in the February, April and December 1928, and the April, 1929 issues of COTTON. They were supposed to be based upon conversations between Jones and Tom Smith, friends of "T. O." Jones was figuring on building a mill equipped with 300 3 1-2-inch 260-needle Model K machines, for manufacturing ladies' fine seamless hosiery, and since Tom Smith had made quite a success along this line, Jones asked him questions about his new mill from the laying out of the floor plans, etc., to the equipment for the different departments; and "T. O." apparently went along and reported for COTTON'S readers the conversations that took place: Jones' questions, and the answers that Tom Smith gave him.

Did Tom Get Those Squirrels?

In the last installment, in the April 1929 issue on page 697, the series wound up, after Tom had "told him all about it," by Tom's saying, "There's an old den back over here in the woods where I left a couple of squirrels last Fall, and I'm planning to go back after them this afternoon . . . ". According to my experience, there was a lot of dope given that would have made good food for them, and I'm going to let off some steam by taking up some of these points, with your permission.

To begin with, in Article Number One, in the February 1928 issue, Jones asked Tom for his ideas of a floor plan for his 300 machines, as to what size units he would place his machines in, etc., and Tom replied, if "T. O." quoted him correctly as follows: "Personally, I like 40-machine units, 20 machines on either side of the shafting, driven by a 5-hp. motor. * * * A unit of this size is more flexible and is more adaptable to the operatives than a larger unit. * * * It makes the lateral aisles shorter and more accessible to cross-section aisles, which serve for the handling of stock and raw materials, work benches, etc."

We invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All accepted contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

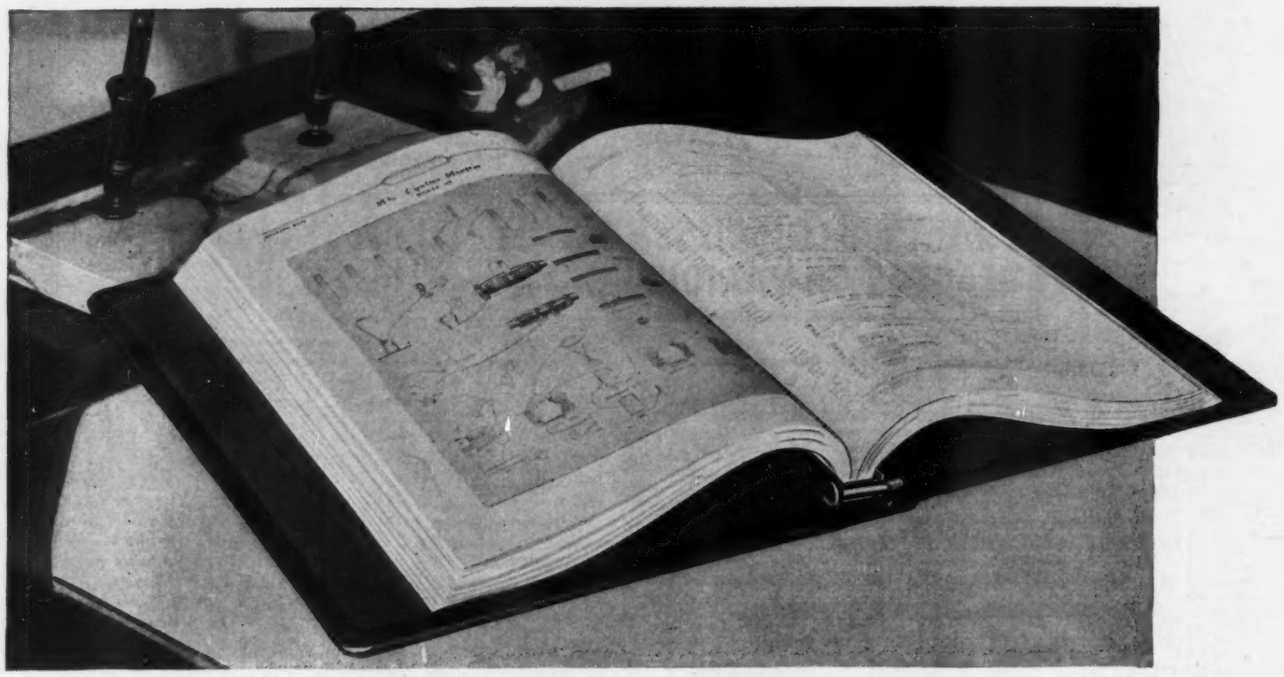
What is a Flexible Unit of K Machines?

Now, my old reliable Webster, in giving the definition to the word *flexible*, says: "Easily bent, pliant, yielding to persuasion." I have not been able to figure out why Tom would want to bend this unit of forty machines, nor do I believe he or anyone else could get them to "yield to persuasion." If Tom can have some wagic wand over a section containing forty machines and persuade them to make good work, I surely could use him and would pay him more than I have ever been able to make.

Now, if we will try to figure out the "adaptable to operatives" part of this advice. Tom says that it makes the lateral aisles shorter, and more accessible to cross section aisles, which serve for the handling of stock and raw materials, work benches, etc. If Tom is going to have the unit of forty machines *flexible*, I do not see where he needs these cross section aisles, as he could "bend' 'or 'persuade" the end of this unit to bend around out of the way when he wants to truck, or carry stock or raw materials from one side of the room to the other.

Reckon He Bends His Machines?

I have a fine plan in mind if Tom's plans are okeh. Perhaps this is where the "adaptable" part comes into use. If you were operating a seamless hosiery mill and all of the floor space was in use and you needed more room, all you would have to do would be to "adapt" some of Tom's *flexible* forty machine units and all of your troubles would be over, as you could "bend" either end of this unit out of the way when



—just off the press

It has been a tedious undertaking—this Parts Catalog. Aside from illustrating and describing every original part of Reading machines it contains as well a complete treatise on the operating principles of all the various parts, motions and mechanisms... Over a year in the making! But the work and expense involved are well worthwhile when we consider how much this volume will mean to Reading owners.

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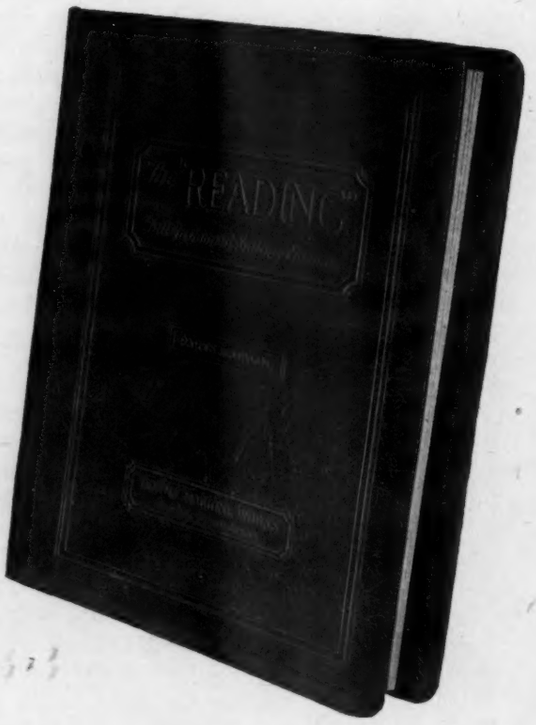

TEXTILE MACHINE WORKS

Dept. C

READING · PA ·

necessary to truck or carry something "bulky" or heavy around the end of the shaft.

Tom's unit which contains forty machines may be adaptable, but it is not, in my opinion, practical.

Now, we turn over to the next page, and find that he would give each knitter sixteen machines. I quote from the February 1928 article again for reference:

> "'How many machines does a girl run, and what are her duties?' Jones inquired.
>
> "Tom replied that the knitter's duties are to keep the yarn on the machine, clip the double sole, inspect the hose, and hang the imperfect stocking on the machine that made it. His knitters can take care of sixteen machines each, he said.
>
> "Jones then asked about how many machines are allowed each fixer and what his duties are.
>
> "'A fixer keeps up forty machines,' replied Tom, 'He inspects all the menders the knitter hangs on the machines, makes all the repairs on the machines, puts in all the needles, cleans the cylinders, oils the machines, and fixes the belts.'

Here is how his plan for the knitters would work out: Count off sixteen for Knitter Number One. This leaves four machines on this side of the forty machine unit. We give Knitter Number Two these four, and we have to go around the end of this unit to get twelve more machines for Knitter Number Two.

Any mill man knows that this is not practical, as it takes Knitter Number Two some time to get around the end of this shaft in case something went wrong with one of the machines on the side of the shaft opposite to the one on which the knitter might be.

What's the Knitter Going to Do?

For instance, a needle breaks and the stop motion fails to stop the machine. The alarm bell is ringing, and when the knitter gets around the end of this unit and gets the machine stopped, the chances are that this broken needle has caused the stocking to wad or pile up and pull the hooks off of several needles.

Next, we will say that Knitter Number Two is on the side of the shaft that has four of his or her machines, and looks across the shaft and sees a cone of yarn running off or running clean. The chances are that this cone would run empty before the knitter could run around the end of the shaft to stop the machine. Perhaps this is where the *flexible* part of Tom's unit comes into action. He might be able to "use persuasion" and cause this *flexible* unit to "bend" around to the Knitter so that he or she could stop the machine before this cone ran empty.

Now, we have given two knitters thirty-two of this forty machine unit, and we have eight more left to give to Knitter Number Three. After giving Knitter Number Three these eight machines, we will have to cross one of these cross-section aisles in order to find eight more machines. This hazard is as bad if not worse than going around the end of the shaft, as is done by Knitter Number Two.

Suppose Knitter Number Three was threading a machine in Unit Number One, and one of the many things that can happen goes wrong with one or perhaps two machines in Unit Number Two, which is across one of these cross-section aisles. Can you imagine what would happen before the knitter could get to this machine or machines and shut down or stop it or them?

Suppose He Got the Squirrels or—?

We may have several broken needles or a cone of yarn run empty or any of many other troubles too numerous to mention. These needles or scraps of waste are expensive and this loss is heavy enough when held down to a normal percentage. When a man wilfully breaks machine parts or makes waste, in these days of high production and low profits, I contend that he is suitable for food for the two squirrels went to hunt.

Now we will figure out Tom's knitting room installation cost to pull his three hundred knitting machines, Model K. If they are cut up into forty machine units, Tom would have to get eight 5-hp. motors, when six would be all he needed.

Then Tom says he would have his knitters clip the double sole from the stockings produced on their respective sections (see quotation above.) If he installs a clipping machine for each knitter he would have to have nineteen, while he could clip the work from these machines on two or three machines by having the clipping done by operators who do nothing else—which I prefer, as I do not want my knitters doing anything but knitting.

Should a Knitter Do More than Just Knit?

I would rather give my knitters more than sixteen machines and require them to walk up and down the aisle in front of their machines "lookin' for sumthin' ". When knitters are forced or required to clip the double soles, their minds cannot be on that machine somewhere down the line there that is going to need a new cone of yarn in a short time. They get busy clipping and forget all about that yarn until it is too late. Then we have a scrap or a piece of waste, and, in most cases, the machine automatically drops in another yarn that cannot start a clean fabric, and "bang"—we have another nice bunch of needles with the hooks broken off.

Why Not Fifty-Machine Units?

I have not been able to figure out the value of the *flexible* and *adaptable* units in dollars and cents, so I am unable to subtract their value from the original installation cost. I would rather leave the *flexible* and *adaptable* advantages (?) off, and make the units larger and practical, and have a crew of knitters who turn out a high-class piece of work and who are satisfied. I would rather have these machines placed in units containing fifty machines each, which would be twenty-five on each side of the shaft. This shaft would be driven by one of those 5-hp. motors that Tom would get twelve good knitters and give each one twenty-five machines and require them to spend all of their time knitting or looking for trouble.

When you give a man or woman more than one job to look after, they usually neglect one or both; but when they have only one, you can hold them responsible for that job, and do not have to listen to excuses

WE ARE devoting the space to this letter because we believe every reader of "Knitting Kinks" will enjoy reading what "Jack" has to say about Tom Smith's ideas. Both men are thoroughly practical mill superintendents. An invitation is hereby extended to any reader who wishes to join in this discussion to submit his views on any of the subjects covered.

EDITOR COTTON.

or alibis as to why so-and-so or such-and-such a thing happened.

How About Laying Out the Machines?

Now let me quote "T. O.'s" first article again, this time about laying out the machine plans, etc. This is from page 414 of the February 1928 issue, as follows:

> "'Well, how much floor space should be given to a machine?' was Jones' next question.
>
> "'The machines can be set 27 inches from centers, side to side, and 45 inches from centers, back to back, with the drive shaft in the center,' replied Tom. 'The two lines of machines will occupy a width of five feet, allowing four inches between the edges of the yarn stands.'
>
> "'Would you dodge the machines so as to run two machines with one pulley?' asked Jones.
>
> "'No,' replied Tom emphatically. 'I would use a 3-inch face steel split or cast iron split pulley for each machine, and let the machines sit in line in cross section. I would place the pulleys on the shaft, space them with a stick cut the proper length, and then set all hangers so as to dodge all pulleys. When the shaft is erected, you can align the pulleys on the machine with the pulleys on the drive shaft, which will give you a cross-section line of machines.'
>
> "The next question the visitor asked was as to what diameter pulleys should be used and what height hangers for the drive shaft. Tom said in his opinion nothing less than an eight-inch pulley. 'If the pulley is too small,' he went on, 'it will necessitate taut belts, which is hard on the bearings of the machine and a waste of power and belting.' As to hangers, he explained that the minimum height of a hanger is governed by the diameter of the drive pulley. 'A 12-inch drop hanger can be used with an 8-inch pulley,' he said. 'If the pulley used is larger than 8-inch, the belt will drag the belt shipper with the machine set the distance suggested from the shaft, and a higher hanger will be necessary.' "

I have copied this out of "T. O.'s" article at such length because I want to refresh the reader's mind on just what Tom had said, and now, with your permission, I would like to address a few remarks directly to Tom and give him my ideas on the subject.

Tom, when you have to put in your next section of Model K machines, try the following plan and see how it works, but please understand that I don't claim this shaft and machines to be flexible or adaptable, but the plan is practical, and will not cover as much floor space as your plan requires.

What's Wrong With This Method?

First, secure a chalk line and give it a good coat of carpenter's chalk. Next strike a chalk line on the floor where the shaft will be placed. After making this mark, start at one end of the chalk and measure off and mark on the floor where each pulley would be if the chalk line was the shaft, these pulleys should be spaced twenty-six inches, centers. This is one inch closer than you recommend, but puts the machines far enough apart to allow any necessary work to be done on them.

Next, lay the shaft line along the side of the chalk line. Be sure to space it so the couplings or joints do not come where you have marked the pulleys. Next place the shaft hanger directly over one end of the chalk line. Bore holes and fasten to the floor, then go to the other end of the chalk line and fasten a hanger to the floor like the other one; then bore holes and set the remainder of the shaft hangers, but do not fasten tight. After these are all set, stretch the chalk line from the one on one end to the one on the other end, being sure that the line is pulled taut. You can set the other hangers to this line and fasten firmly to the floor. Now you are ready to lay the shaft in the hangers. After placing the shaft, slip the compression sleeve on the joints, but do not slip the flanges on the sleeve as there should be no strain on these joints while leveling and lining. Now stretch a line the full length of the shaft, placing it about the center of the shaft. Be sure you have it the same distance from the start at each end, and you can then go to lining and leveling.

After you are sure you have the shaft lined and level, fasten the couplings, making sure not to pull out of line when you do this. Now you can put on the pulleys and motor. I prefer a six-inch pulley and twelve-inch floor hangers. When you use larger pulleys, you have to use larger hangers or cut holes in the floor for the driver gear to run in.

Now place a machine on one end of the shaft, setting it thirteen inches from the center of the shaft to the face of the back legs; placing another machine on the other end in the same manner. Fasten these machines to the floor and then slide or place the balance of the machines in place, but do not fasten them. Next, stretch a line from the machine on one end to the one on the other end. This line should be on the back side at the base of the machine. Now stretch another line on the front side of the machines at the bed plate; then set the machines to these lines and you will have a row of machines lined perfectly.

One Needle a Day on Silk? Goodnight!

Getting back to some more of Tom's advice, the next point I want to take up is what he said about needle breakage on these machines. Here is the way "T. O." reported it in the February 1928 issue:

> "'In running pure silk, what is the average needle breakage per machine?' asked Jones.
>
> "'With the better grades of yarn, and well trained knitters and competent fixers, the actual needle breakage is very small,' Tom answered, 'but in order to produce fabrics without lines the needles must be kept in perfect condition. Worn latches, loose latches, stiff latches, worn heads, loose and rough rivets and such defects must be removed, which will run the total to about one needle per machine per day.'

And how! One needle per machine per day on silk, 260-needle work! After reading this advice it was hard for me to believe that Tom had ever fixed knitting machines or had any practical hosiery mill experience. I believe any man who has will know that it is

Actual Photographs in Color

When mothers see merchandise like this, they won't do much footwork shopping around. They'll buy these finely designed, finely made kids' socks, bare-leg anklets and seven-eighths hose. They are all made on "Standard Knitters" and made right for quick turnover of goods and profits. Your jobber has or can get for you these products of "Standard Knitters."

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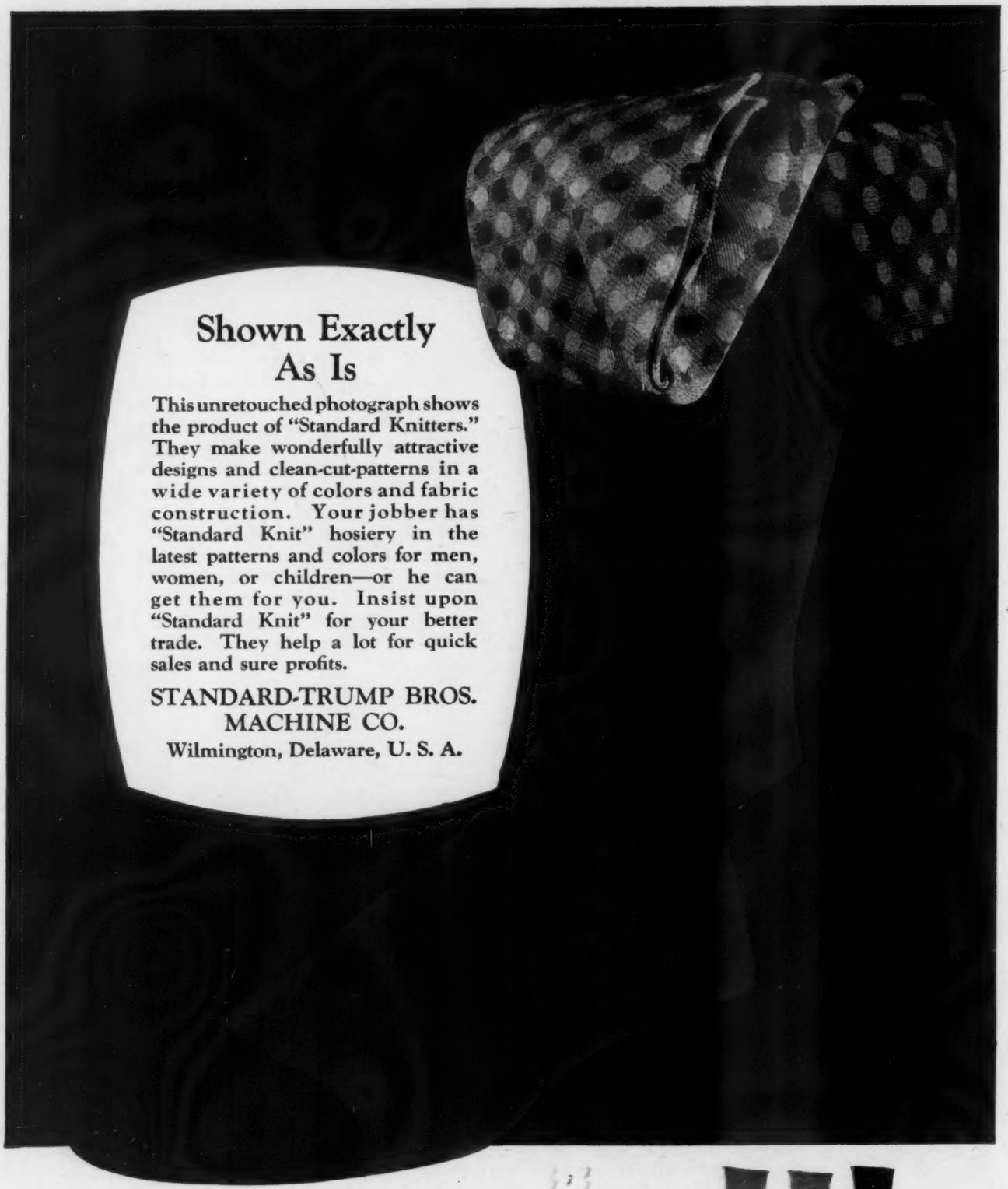

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This unretouched photograph shows the product of "Standard Knitters." They make wonderfully attractive designs and clean-cut-patterns in a wide variety of colors and fabric construction. Your jobber has "Standard Knit" hosiery in the latest patterns and colors for men, women, or children—or he can get them for you. Insist upon "Standard Knit" for your better trade. They help a lot for quick sales and sure profits.

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Let's Get Technical:

the half-hose illustrated above are the handiwork of a "Standard" Knitter equipped with Attachment 41. This is a single trick wheel machine capable of producing exceptionally clean reverse plated designs even when delicate single-needle patterns are required. As many as six colors in one stocking are possible.

Wide-awake jobbers know that hosiery mills equipped with "Standard" Knitters offer them the widest variety of patterns and fabrics in a price range to meet every class of trade.

impossible to run 260-needle Model K machines on one needle break per day. Several years back we allowed a needle for each machine per day, but when 54 and 70-gauge machines put in their appearance, we forgot all about that one-needle stuff, and I can tell Tom or anyone else that the Model K fixer who can run 260-needle machines and is making fabric on one needle per day has never fixed machines nor does he know what a machine is when he sees it.

A fixer, according to Tom, keeps up forty machines. This fixer will find one-third of the forty needles given him to operate his machines to be bad when he puts them into the machine. Some are uneven in size, making lines, and have to be thrown away; some have rough rivets, some have rough spoons—these defects make fuzzy lines or streaks when run in silk. I would be well satisfied when one of my fixers runs his job on one needle per dozen, and I will give him an increase in pay when he does it. In these days of tuck stitches, pointed heels and other attachments too numerous and complicated to mention, it is impossible to run 260-needle machines on silk and not use more than one needle per day unless this "flexible and adaptable" proposition Tom offers us does more than I give it credit for doing.

Why Not Give Fixers a Real Job?

Going back now to what Tom said about the duties of a fixer. As quoted, Tom said the fixer should keep up forty machines, and that his duties are to inspect all the menders the knitter hangs on the machines, make all the repairs on the machines, put in all the needles, clean the cylinders, oil the machines, and fix the belts. A little later on "T. O.", in February 1928 COTTON article, quotes him as follows in connection with these duties:

> "* * * A good fixer will find that all these things will consume only about half of his time, and he can spend the remainder of his time looking for little defects in the hose. * * *"

Now, Tom listen to me: If your good fixer can keep up forty machines and work only half of the time, why not give him about seventy machines and increase his pay accordingly? He would appreciate the increase and work much better, knowing that his efforts were appreciated.

But, any man who tells you a fixer can keep up forty 260-needle Model K machines that are running and manufacturing ladies' silk hosiery with present-day attachments on them, and is only working half of the time doing it, is handing you what the farmers all like to get and spread all over their land when they go to plant their corn and cotton, and . . .

Four Per Cent Seconds? Ye Gods!

Here's another thing, about seconds, and I'm going to quote rather fully from Tom's remarks this time, in order to explain what I say. Here's the conversation reported by "T. O." on this subject on page 415 of the February 1928 issue:

> "'Then what will the seconds run?' asked Jones.
> "'Seconds from all causes throughout the plant should not exceed four per cent,' answered Tom.
> "'What!' exclaimed Jones. 'Why, you'll make half that amount from short lengths, won't you?'
> "'Not if you have one sizing man who is thorough in his work, to do all of the sizing, so you can place the responsibility,' declared Tom. 'Every time a machine is knitting too loose or too tight it doesn't mean the tensions should be changed. There are causes too numerous to mention, which you are familiar with, which will affect the length; and the efficient sizer looks for the cause and removes it. A trained knitter will detect any appreciable variation in the length of a stocking and report it to the fixer. A fixer who is working for results will always size a machine before leaving it, after making any adjustments on parts which will affect the stitch. I repeat, an efficient organization will keep seconds to four per cent.'
> "I knew this question of seconds was Tom's particular hobby, and I could tell that we were slated for an interesting discussion of it.
> "'The subject of seconds is one that interests me very much,' he continued, and I could tell he was warming up to it. 'It should interest every manufacturer. Seconds are the pulse of the whole organization, and the condition of the body is detected by the pulse. If a manufacturer is making six per cent more seconds than he should make, and his production is 1,000 dozen per day, he is losing $120 a day, because of the six per cent excessive seconds.
> "'There is always a cause for this excess, and $120 a day expended in the right direction will run down the cause and correct it. When I see such a wanton waste from this source in some plants, I am amazed. Why you know, there is an army of bargain hunters who happen to belong to the same race as the wisest man, King Solomon, running around over the country picking up these second bargains and getting rich because of our inefficiency and stupidity, and it should be stopped! We all ought to hang out our shingle on the mill door, 'No second bargains for sale. We've discontinued this line.'

Right there is where Tom made another big mistake. When a man tells you he is running three hundred K machines now-a-days, and not having more than four per cent seconds, he is either not grading or classifying his work or else he's . . . well, at any rate, you can bet your bottom dollar he's not selling the high-class stores, and he will have to dispose of his products to the relatives of King Solomon's descendant whom Tom mentions and whom he wants to put out of business.

What's Wrong With Metal Tables, Tom?

Now let's move along to his next article on page 979 of the July 1928 number of COTTON. This article represents a report of the second visit which "T. O." and his friend Jones paid to Tom Smith. This time they wanted to get some dope on seaming, looping and inspecting in this fine-gauge mill that Jones was going to build. Let's "look into the record on this and see what he says."

Right at the start, Jones asked Tom about the seaming and looping tables and wanted to get his ideas.

> "'Well,' said Tom, 'there are several manufactured looper and sewing machine tables on the market, and they are all good, and have many convenient compartments, but my experience with compartments is, that they make a mighty good place in which to dispose of a lot of junk and a hiding place for bad work. The most important thing about a table is its sturdiness, its freedom from vibration and a lot of noise. These are the things that disturb and affect the nerves of the operatives. The quiver of the looper points affects the eyes and cause headaches, while the vibration and roar of a sewing machine is

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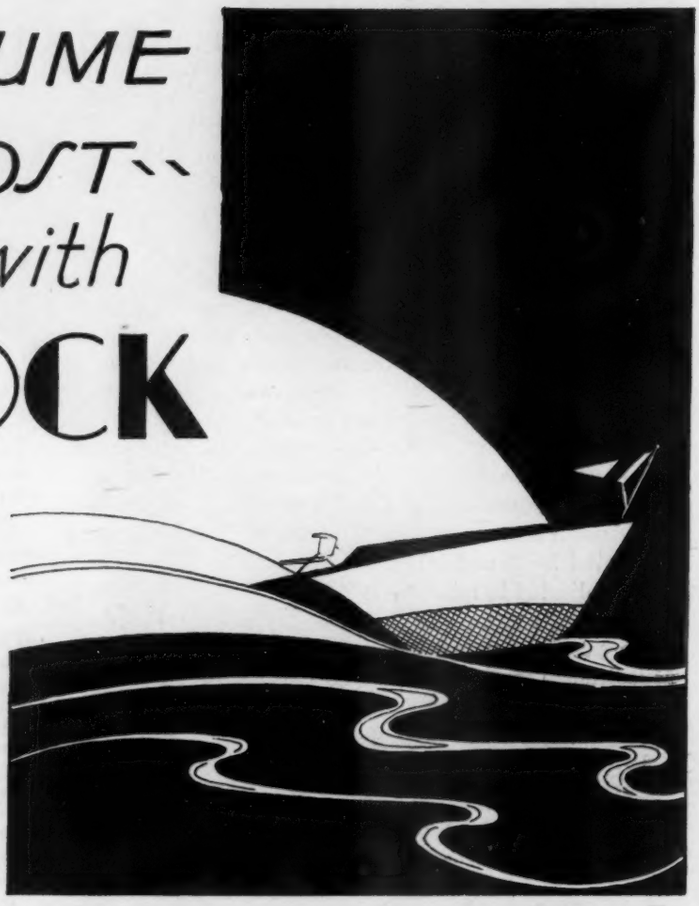

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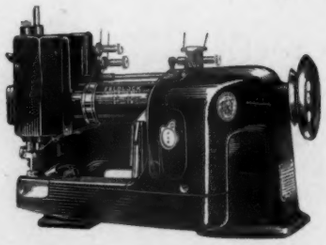

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hard on the nerves. Of course, the tables are no steadier than the floor. The floor should be firm and the tables should be firmly bolted to the floor. The best construction for tables is rigid frame work, mortised and bolted, using bolts with jam nuts, with the sub-runners bolted to the frame work and the top floor of tongue and groove hardwood laid in cross-section and highly polished and finished.'

We take it from this that Tom likes his old-time, home-made looper table better than he does any of the "new-fangled" store-bought ones, because it does not shake or vibrate. Now, his table is okeh while it is new, but after a year or so the bolt holes become worn and are larger than the bolts, and this lets the table shake and wabble.

There are some good "store-bought" metal tables on the market that are far ahead of the old-type, home-made ones. These compartments which Tom dislikes, I have found to be an asset instead of a liability. You can keep the metal table sturdy or solid indefinitely, as it is put together with rivets which hold each section firmly. I'll "bet my socks" that you can look on Tom's looping table and see pocket books, gloves, lunches, etc. If Tom had one of these new-fangled metal tables, all of these articles could be put out of sight in one of the drawers or compartments which Tom does not like. If Tom had a crew of well-trained loopers, they could be taught not to hide bad work in these compartments.

Why Make Flyers Out of Fixers?

Then Jones asked Tom what the looper menders should run, and here was Tom's reply:

"'This depends largely on the looper fixer. The old saying that 'An ounce of prevention is worth a pound of cure' is very applicable to a looper fixer's job You notice a successful aviator thoroughly inspects his machine before he takes to the air. The same principle should be applied to a looper. A looper fixer by inspecting his machines several times a day, seeing that the stitch mechanism is properly set up, and that there is no burr on the point of the needle and that the trimmer is cutting clean, can prevent most all the looper menders. With this method the looper menders should not exceed one per cent.'

Here, it seems to me, Tom is trying to make an aviator out of his looper fixer. Now anyone that ever worked about a hosiery mill three hours knows that there is nothing about a looping machine that resembles or acts similar to any part of a flying machine. Tom, your looper fixer can never use an aeroplane on his job as he would never find room to take off or light.

Does He Still Use These Boards?

Next, Tom tells us how to make inspecting boards, saying:

"'I make my inspector boards out of ¾-inch hardwood boards, preferably birch, which takes a polish well. The dimensions of the finished boards are: Length, 36 inches; width 5½ inches x 3½ inches. To the end of this board is bolted a cast iron spindle, a cast iron bearing mounted on the top of a wood post cut on an angle to tilt the board is the bearing for the spindle. All the stock of the bearing is cut out except about ½-inch at either edge which reduces the friction on the bearing. The post is fastened to to the floor with two cast iron brackets. * * *"

This practice was discarded several years ago by most of the up-to-date mills, as they can get better boards from two or three reliable firms that are making an all-metal board or form that is much more rigid and will not break or wear out for several years.

Where Is Tom's "Bright Boy?"

In the December number, Tom gets up in the air again. This article is a report of the third visit of "T. O." and Jones, and this time they talk about the dyeing department. I'm going to quote him again at length in order to give the reader his line of thought. Jones asked Tom what equipment he would need for his dyehouse, and Tom replied:

"'Well, to begin with, I would fit up a laboratory with all of the necessary equipment for matching shades, such as gram and grain scales, dyebath, beakers, pipettes, graduate cylinders, laboratory bottles and similar equipment. Then I would pick up some bright, ambitious high school boy who didn't know very much chemistry, and not too much of anything else, but with a strong desire to know and the energy and faculty to acquire. I would try to find one who had a good eye for colors and a fine sense of accuracy. I would teach him how to match shades and select the proper combination of dyes that will go on evenly without a lot of trick doctoring and stay put.'

"'You don't mean to discount the college-trained chemist, do you?' asked Jones.

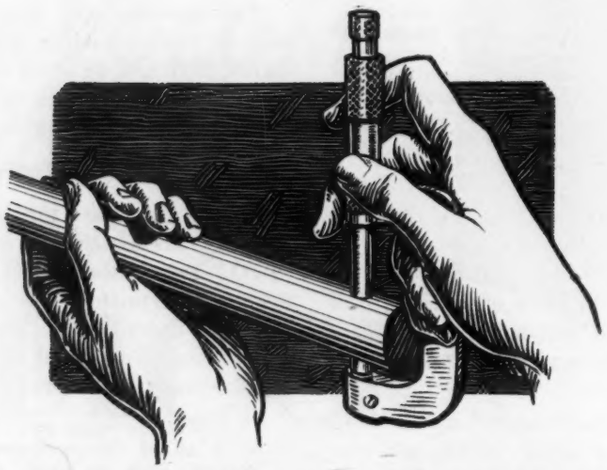
"'Not in the least,' replied Tom. 'Education is what the textile industry needs more than any other one thing, but you can't carry water in a silo. Give the boy the practical experience first, for a foundation to build on, and he won't explode when you fill him with scientific theories.

"'You know,' Tom continued, 'after that boy Lindbergh took to the air and flew a pathless course alone through fog and storm to France, the government brought him back home to teach him to read the most modern scientific instruments to give him a finer sense of direction. Apply that same principle to your dye man. When he gets so he can dye silk hosiery well, let him learn all he can about chemistry and the dyeing of other materials.'

Why Not Ask Lindy About It?

I think this is another place Tom slipped up. He intimated that Lindbergh did not know how to read any of the modern instruments that are placed on the up-to-date machines, until he had made that trip to France. Now, if I remember correctly, the newspapers said that Lindy was housed in a machine so built or constructed that he was unable to see anything except that which was shown by the instruments that were placed in his machine. It does not seem possible that a man would start on a trip like the one he made, housed up in a room or cabin that was completely enclosed, without knowing how to read these instruments. I'll let Tom fly his aeroplanes, as I do not know anything about them, but when he tries to fly them in a hosiery mill he is attempting the impossible, and when he tries to dye silk hosiery with this boy he is up against the same thing.

Tom says he would not engage or hire an experienced dyer, but would pick up some bright ambitious high school boy, who does not know very much chemistry and not too much of anything else, but with a strong desire to know and the energy and faculty to acquire. This boy Tom proposes to teach the art of dyeing silk hosiery—which I have found to be a hard proposition.



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This task of teaching will continue over a period of several years, if Tom makes a good man out of this bright school boy. Someone that knows how to do the work will have to stay in the dyehouse and watch this "bright boy" of Tom's for a period of months unless Tom's "bright boy" is much brighter than the average of boys that it has been my luck to see trying to learn the art of dyeing silk hosiery. If Tom hires an experienced man to do this teaching, it is going to cost him several perfectly good dollars before he can turn this "bright boy" loose and let him do the work.

Next, we will take it for granted that Tom and Jones are practical dyers themselves and will teach this "bright boy" all the tricks of matching and making colors. This job requires them to "stay put" in the dyehouse and does not allow them the time to supervise the other departments.

If Tom leaves this "bright boy" in charge he is going to make a pile of re-dyes and these mean money to any mill. It is hard to keep them down to a reasonable amount when you have competent men in charge of the dyehouse. Now, if you let them go out to your customers you can say—and tell the truth—that "It won't be long now," for the day has passed when a man can keep customers with the kind or class of dyeing this "bright boy" will turn out. After Tom's "bright boy's" bad colors have caused all the mill's good customers to purchase their hosiery from a mill that puts out even shades or colors, produced by a practical dyer, all Tom can do is hunt up that relative of King Solomon that he wanted to starve to death, and "proposition" him.

I am always open and ready for any proposition that will help increase the quality of the product I manufacture or decrease the cost without hurting the wear or appearance of this product, but I simply couldn't agree with these points in Tom's suggestions, and just had to pick him up on them. If he was making a request for an argument, he doesn't have to travel any further, as I can argue with a signboard if that particular signboard is wrong. I hope the readers of COTTON will come back at me, as I have gone after Tom, in case they do not agree with me on any point; and I hope also that we may hear from "T. O." and his friend Tom again.

JACK (TENN.)

Did you enjoy reading this? We should be pleased to have you take part, criticizing either Tom Smith, or Jack, or both of them, if you don't agree. Let's keep this up, because every man's ideas are helpful.

We have already submitted an advance copy of the foregoing letter to "Tom Smith", and he has come through with a corking good rebuttal to "Jack's" criticisms. We should like to use both of them in the same issue, but space limitations prevent this, because both of the letters are lengthy. However, if you will save this issue of COTTON containing "Jack's" letter, for reference in connection with "Tom's" rebuttal, which we shall try to publish in the October number, we believe you will find "Tom's" letter of as much interest as you secured in reading the criticisms of "Jack" this month.

No personal offense is intended by either of these mill men. Both are practical manufacturers, but—as in horse racing—there's always a difference of opinion, and we believe every reader will after all get good ideas out of the letters of both men. Will you join this discussion?—The Editor.

Removing or Preventing Rust Spots on Full-Fashioned Legs.

EDITOR COTTON:

In a recent number, "CONTRIBUTOR NO. 4603" wanted to know how to remove rust caused on full-fashioned hosiery legs drying on metal racks.

Those spots are caused by the goods coming in contact with the rusty parts of the racks, and that, in the first place, shows neglect in taking care of the equipment. Iron racks, as well as any other iron equipment, which are liable to come in contact with hosiery, should be carefully enameled so as to prevent any moisture from corroding the metal and doing damage to the goods. There are some very efficient enamels that could be used on those racks, which would always provide a safe condition. It is easier to protect the goods from rust spots than it is to remove them. Instead of using a galvanized iron trough, which in a short time will get rusty and produce rust spots, it would be safer and more economical in the long run, to have them made of Monel metal, which will last longer and which is safer at all times. Unless well protected by lubricants, for working parts or enameled, rust is produced very easily on steel and iron exposed to the moist atmosphere necessary in a knitting mill, and a constant watch should be kept at all times. In some cases, however, spots that look like rust are seen in the goods, and these are even harder to remove and should be investigated.

Rust spots are easily recognized by a simple chemical test. In a little cup a few grains of yellow prussiate of potash are dissolved in some boiling water; then a few drops of ordinary muriatic acid are added and stirred up well. With a glass rod or stick, a few drops of this solution are dropped on the spot to be tested, or the spotted portion is immersed in the solution. If it is iron rust, the spot will immediately turn a deep blue. If it is anything else the spot will not change color.

This test is also good to find out if the water supply is free from iron, which most waters are not. The prussiate of potash and muriatic acid combining with the iron contaminates the water and will color it a beautiful prussian blue; the more iron in the water the deeper the blue will be.

Rust spots are removed from the goods by dissolving the iron in a hot solution of oxalic acid. If the spots are few they can be treated one at a time. In a kettle of boiling water, for every gallon one ounce or more of oxalic acid is dissolved in it and the spots are immersed in it one at a time. In a few seconds they will disappear. If there are too many spots to be treated in that way, a bath is made up with three per cent oxalic acid and brought to a boil, and the goods are worked in this bath for about 30 minutes, and then washed in a warm and a cold water. For spots that are darker and larger, it is advisable to work them singly first, and then to work them again together with the rest of the lot of spotted goods in the 3 per cent bath.

It is better to remove rust spots with this treatment before the degumming operation, so as to let the degumming soap or oil neutralize the effect of the oxalic acid.

FARBER.

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Which is It—Sleazy or Crepy?

EDITOR COTTON:

This refers to the inquiry which you published in the July issue, page 1087, from "CONTRIBUTOR NO. 4581," with reference to a sleazy and crepy condition in a four-thread all-over silk 45-gauge full-fashioned stocking, a sample of which you submitted to me in connection with securing a reply to it.

This sample indicates clearly a straight case of sleazy knitting coming purely from the knitting machine. Dyeing and finishing is in no way responsible for the trouble, other than that sleaziness may appear a little more prominent after the silk is de-gummed. I believe the trouble is due largely to dry silk, or at least to silk not properly conditioned. I would suggest that the inquirer age his silk in a damp vault of some description for at least five or six hours before knitting, so that the silk will have sufficient time to mellow thoroughly. In the absence of a conditioning vault, I would recommend that the back-wound silk be placed in an airtight box and a wet blanket spread over the top for several hours before using.

I would also advise that the stitch construction of the machine be checked carefully, and that the draw of the needle be shortened so the shortest point of casting off the stitches in a satisfactory way. Also adjusting the knocking-over bits just as high as they will operate satisfactorily.

I know of no way by which sleazy knitting can be produced in the dyeing and finishing operation. Fabric can, of course, be damaged in these operations and distorted stitches are traceable to improper methods of dyeing and finishing, but sleazy knitting of the type shown in the sample submitted is purely a knitting machine trouble, or rather is traceable back to the knitting machine. Such fabric can be corrected to a great extent in the dyeing and finishing.

CONTRIBUTOR NO. 4576.

EDITOR COTTON:

I have carefully examined the four-thread all-over silk 45-gauge full-fashioned stocking, submitted by "CONTRIBUTOR NO. 4581," who complained of sleazy knitting, and, in my opinion, the stocking is not sleazy but is very crepy. It is a common error to confuse sleaziness and crepiness because sleaziness is usually accompanied by crepiness, since crepiness is a natural consequence of loose knitting. My definition for sleaziness is uniformly loose knitting or not enough courses per inch, while crepiness is small groups of distorted stitches occurring at intervals in the fabric out of position with reference to adjoining stitches. A group of crepy stitches does not necessarily contain any more material than a similar number of normal stitches but the abnormal shape they assume causes the crepy appearance.

It is like laying a brick edgewise in a regular course laid flat.

If it were possible for a knitting machine to have all of its parts which affect the formation of the stitch so positive in their control as to prevent any deviation in the formation of the loops, then by putting in sufficient courses crepy stitches could be eliminated entirely, but the result would be fabric without elasticity. Since elasticity is the objective of knitted fabric, then too many courses per inch is equally as objectionable as too few.

The problem of the knitter is to produce an elastic fabric with a knitted stitch uniform in appearance. This is why fabric formed on a full-fashioned machine is so popular—because it meets these requirements. All full-fashioned machines are designed and constructed to effect this result if they are correctly set up and the knitting threads are properly conditioned.

Crepy fabric is a product of a knitting machine and not a dyehouse. I can see no reason why this defect should ever be charged to the dyer. He may correct some of it but I know of no process he could employ to produce it. It may be possible for the dyer to remove enough leading material such as gum, soaking oils and soap, in degumming, to cause enough sleaziness to permit some predetermined distorted stitches held in position by the loading materials to readjust themselves, or he may by the free use of oils and other softeners counteract some of the distorted tendencies of some of the stitches. Yet it is a fact that all the crepe in a finished stocking was knit into the stocking, though it may not be as noticeable in the natural stocking as in the finished state.

Then if we accept the theory that all crepe is made in the knitting, we must attack the problem at this source. The cause for most of the trouble is the condition of the silk when it reaches the needles. If the silk is soft and pliable, there is little reason for crepe formation. In order to accomplish this the proper soaking solution must be used by the throwster and the right amount of twist put into the silk. Then the knitter must further condition the silk by backwinding it and running it through a backwinding solution which will penetrate the silk and soften it still more. Then it should be stored in a conditioning room for a few hours in a humidity of about 85 per cent in order that the silk may thoroughly and uniformly absorb the moisture. After the silk is carried to the machine it should be placed in humidors to prevent any drying out. If an ample supply of soft water is maintained in the wick boxes, and the wick boxes and wicks are kept clean, the silk will pick up still more moisture and by the time the stitches are formed it should be possible to wring water out of the fabric. The silk should carry as much water as it will contain without spraying on the machine.

With the silk so conditioned if there is any crepe in the fabric there is a need for some adjustment on the machine which any competent fixer can make to correct this trouble. The trouble is usually too much play between the failing bar and the butt of the jack sinkers or not the right amount of press on the jack springs.

I am of the opinion that the main cause for the crepe in the sample submitted can be traced to the condition—or, I might say, the lack of condition—of the silk, and I do not believe it can be corrected in the dyehouse.

CONTRIBUTOR NO. 4573.

The YARN MARKET

Philadelphia, Pa., August 17th, 1929.

A LITTLE RETROSPECTION here will reveal that the report of last month's conditions in the yarn market was somewhat brighter than previous reports had been. It will also be remembered that one of the major factors in bringing about better conditions in the market, from the seller's standpoint, was the free flow of conversation concerning curtailment.

The present report period, which begins with the week of July 15th, finds the market becoming more stabilized than ever. The upward trend of cotton quotations caused some of the spinners to withdraw previous asking prices and demand from one-half to one cent per pound more. However, they did not find a large number of buyers. Still, it was believed by many that the so called "wise buyers" would be ready to purchase yarns sometime during the next three or four weeks. As the majority of sales that have been transacted during the last few weeks were at prices that netted little or no profit for the spinners, it is only natural to suppose that the spinners will remain firm on the new prices asked.

During the next week spinners and sellers appeared just as firm, if not firmer, on prices asked. Many distributors were asking 36 cents for ordinary 20s 2 and 40 cents for 30s 2 carded warps. Although there was no immediate response by the buyers to these new prices, the general consensus of opinion was that very few buyers were over-stocked with yarn, and that quite a few Fall orders could be expected in the next few days. However, no exceptional increase in sales was expected during the time preceeding the issuance of the cotton crop report on August 8th. Too much uncertainty concerning the cotton crop was prevalent to expect otherwise.

The start of the new month August found the yarn market in a more or les unsettled state. Not a large number of buyers were wanting to buy, however, those few wanting to buy wanted to do so at pri ces so low that the sales would net no profit whatever to the sellers. A few of the wise buyers were wanting to place orders for Fall delivery at the present prices. This put most spinners in a very confused state because of the tremendous uncertainty concerning future cotton quotations. Many eminent yarn men, however, claim that if cotton quotations experience a decline yarn quotations will not endure a subsequent dip, but that if cotton prices, after the crop report on August 8th, are of an upward trend yarn quotations will probably assume a more rapid ascension.

The Government cotton report during the next week, estimating that 15,543,000 bales would be produced, did not have the effect on the yarn market that some were expecting the report to have. This was due to the fact that the estimate was just about as most were expecing it to be. A short while after the report some of the spinners appeared to be weakening a little in asking prices, and the majority of buyers were demanding price concessions.

During the last week of the present report period practically all local distributors and spinners' agents lowered their quotations on carded single and ply skeins, warps, tubes and frame spun cones. The reductions averaged about a half-cent a pound. It appeared that until spinners finally arrived at some conclusion as to the lowest price they would sell for, or unless weather conditions in the cotton belt produced a scare in the cotton market that prices would continue to drop. A large number of the spinners appear optimistic, however, and believe that Fall will bring an increased demand with better price.

Philadelphia prices on August 13th follow:

Single Skeins.

4s to 8s	28½ @29	10s	29½ @30
12s	30½	14s	31
16s	31½	20s	32½ @33
24s	34½ @35	26s	36 @36½
30s	37 @37½		

Single Warps.

10s	30	12s	30½ @31
14s	31½	16s	32 @32½
20s	33 @33½	26s	36½ @37
30s	37½ @38		

Two-Ply Skeins.

8s	29 @29½	10s	30½ @31
12s	31 @31½	14s	32
16s	32½	20s	33½ @34
24s	36½	26s	37
30s	38	40s	45

Two-Ply Warps.

10s	31½	12s	32
14s	32½	16s	33
20s	34 @34½	24s	37
26s	37½	30s	38½
40s	45 @46		

Frame-Spun Carded Yarns on Cones.

8s	28 @28½	10s	29½
12s	30	14s	30½
16s	31	18s	31½
20s	32	22s	32½
24s	34	26s	35
30s	37	40s	44
30s dbl. carded	39	30s tying in	35

Carpet and Upholstery Yarn in Skeins.

8s and 9s 3-4 hard white warp twist	29½ @30
8s and 9s tinged tubes	27
8s 3-4 hard twist waste	27 @27½

Two-Ply Combed Peeler Skeins and Warps.

8s to 16s	43	20s	45
24s	50	30s	52 @53
40s	55 @56	50s	58 @60
60s	65 @68	70s	75 @78
80s	85 @90		

Mule Spun Carded Yarn on Cones.

10s	34½	12s	35
14s	35½	16s	36
18s	36½	20s	37
24s	38½	26s	39½
30s	40½	40s	48½

Single Combed Peeler Yarn on Cones.

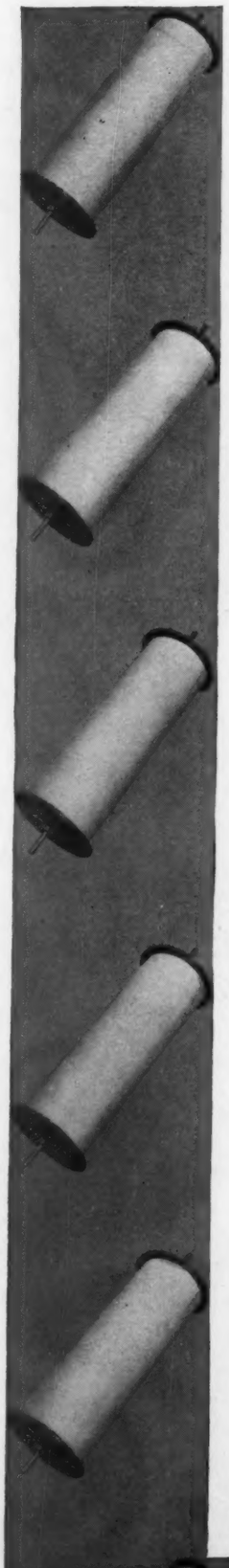
18s	41½	24s	45
30s	49½	36s	51½ @52½
38s	52½ @53½	40s	53½ @54½
50s	58 @60	60s	65 @68
70s	75 @78	80s	85 @90

Mule Spun Combed Peeler Yarn on Cones.

10s	44	12s	45
14s	46	16s	47
18s	48	20s	50
22s	51	26s	52
28s	53	30s	54
36s	57	38s	59
40s	60		

Silent Chain Drives.

The Ramsey Chain Co., Inc., Albany, N. Y., have recently issued a new catalog, which contains 85 pages of illustrations and data on power transmission with silent chain, written in a plain, understandable manner. It will be found to be a great help in solving transmission problems and a valuable addition to a technical library.



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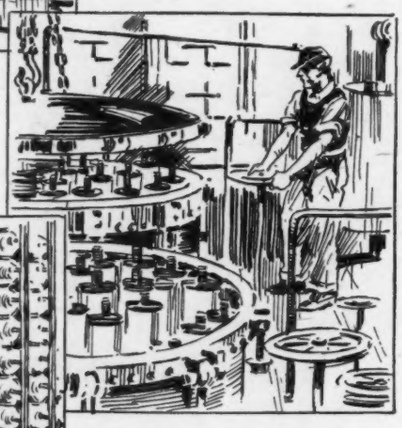
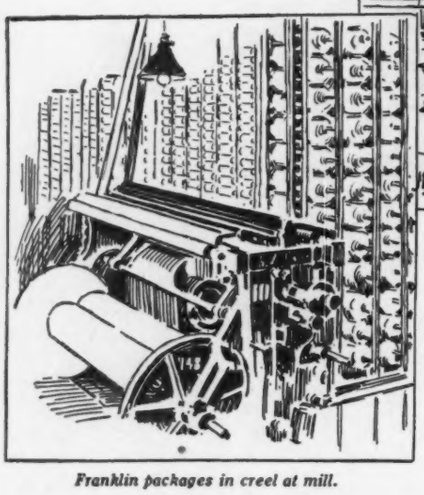
Mailing color specifications for yarn already in hands of Franklin Process Company.

How the "Speedy" system operates

Speedy Dyeing for Speedier Production



Dyeing yarn from stock wound on Franklin packages.



Franklin packages in creel at mill.

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The KNIT GOODS MARKETS

GREATER DIFFICULTY in getting detailed orders for full-fashioned silk hosiery for Fall may be experienced as a result of Julius Kayser & Co. announcing reductions ranging from 50 cents to $1.25 a dozen. Although several weeks elapsed before manufacturers attached so much importance to the mark downs as supplying an incentive for any general downward revision, it soon came to be realized that large buyers, while disposed to make Fall commitments in the form of blanket orders, were slow to indicate when specifications light be forthcoming.

Interviews with some of the more important manufacturers selling to jobbers and with leading department stores selling nationally advertised brands of hosiery failed to uncover reasons satisfactory to either element consulted why a direct-to-retailer mill should have risked demoralization of a seasonally slow market with a markdown that had not been called for by dealers.

A person in authority in a large mill in Tennessee distributing through retailers directly said while on a business visit to the northern markets, ten days after the sensational reduction, that as his mill was operating at overtime plant capacity and selling its production at prices which had been maintained for some time, he failed to comprehend why the markdown had been made and doubted that his mill would trail along. Others spoke similarly, among them an executive of a leading mill organization in Philadelphia, also selling to the retail trade. Manufacturers distributing almost exclusively through jobbers and selling large department stores were for the time undecided, making it clear, however, that unless there appeared stronger reasons than then existed why profits ought to be further sacrificed for increasing retailer profits, they would make no revisions.

Retailer Asks More Profit; Says Selling Expense is Higher

AN INCREASE in the cost of operating hosiery departments in department stores is given by a person for a number of years closely identified with the management of such a department in a Philadelphia department store that is known to large manufacturers in every American hosiery center. There was a time, this person says, when buyers were content to pay $12 a dozen for hosiery to sell for $1.49 a pair. Store managements now would soon get rid of a buyer who failed to get a lower mill price for $1.50 stockings. They expect him to pay not above $11.25 to $11.50. This conforms to the prices in the new list of the Kayser company, two numbers costing retailers $11.50 a dozen each having a suggested resale price of $1.50, comparing with $12.50 and $1.50 respectively in the previous list.

Price adjustments lead to the introduction of new numbers. A well known New York hosiery selling agency, representing substantial mills, is bringing out for Fall a 4-thread silk 45-gauge stocking with picot top to be sold for $11.25. It will have a mercerized silk-plated foot. A standard price for all over silk 4-thread 45-gauge is $12 a dozen, and several mills might be mentioned which are selling capacity production at that figure. Others, with a price a half dollar less, are not so well supplied with orders, according to an extensive primary market operator using the product of mills in both classes.

Seven thread silk 42-gauge hosiery with lisle hem, which has been a target for price hammering for some time, is a subject of seemingly keener competition than any other full-fashioned item. A mill line which less than three years ago went into distribution at $11.50 a dozen now is selling regularly for $9.50, although the original specifications have undergone no change. Another mill line, answering to the same description in every particular, is sold for $9 a dozen. But it contains 1½ inches less silk in length and is an inch narrower than the $9.50 stocking, the difference being shown the writer by placing one stocking on top of the other. The $9 stocking "gets by" in stores where the buyer may close his eye to discrepancies, for keeping in good standing with the powers in the merchandising and management departments. The manufacturer of the $9.50 line has brought out a number to sell for $9, net 10 days, packed 12 pairs in a carton.

An 8-thread silk 45-gauge from a well known manufacturer in Illinois is priced $12.50, for picot top. This is a half dollar higher than the common current quotation of several Pennsylvania mills knitting full length and width. The Illinois mill is specializing on 8-thread 42-gauge hose, presenting one number, with lisle hem, for $10.25 and another, silk to top, for $11. The mill, reporting through its eastern representative, states it is well supplied with orders, all for practically spot delivery, and therefore prices have not been reduced. A North Carolina mill, one of the better known full-fashioned establishments in the South, is reported meeting with much success with a 6-thread 42-gauge, all over silk, with French heel, to jobbers for $10.62½ a dozen.

French Heel Reported Displacing Fancy Pointed

THE MARKETS are quite well supplied with fancy heel hose, in which the twin and three-point construction are being vigorously exploited by mills aiming to escape the keen competition in staples. It is the impression of some large manufacturers and the opinion of buyers for women's shops that the French heel will be quite extensively worn in the Fall and Winter. The opinion may be an inspiration of a wish, for if there is one item of which leading shops are skeptical, it is novelty hosiery with features that are outstanding. The French heel, it is pointed out, contributes to the "slenderizing effect" of which so

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much is heard in behalf of the pointed heel as originally sold in a big way, is a simpler mechanical proposition, and not so liable to be affected by style fluctuation. But that it ever will displace the single point is doubted, although its sales are reported considerably less than a year or two ago. It still is profitable for the owner of the patent, who is collecting royalties from quite a number of establishments.

The Twin-Point Heel.

The twin-point heel came to be offered in so many designs that it was not surprising a few manufacturers essayed a form of construction described as three-point, somewhat suggestive of some of the mediaeval architecture. The step-up form is being used for a seamless silk line for the higher price bracket. The lines are practically a reproduction of those of the dark point Van Dyke of the Cadet Knitting Co. An objection laid aginst this heel by some factors is that, with the towering center flanked by less lofty towers, the heel is given an excessively heavy appearance, unless it be in self colors, and even then, it is felt, buyers will not be attracted to it, as being a too radical departure from normal lines. It appears the handlers of hosiery, the interests which have been compelled to sacrifice various novelties in the last few years, are sidestepping the architectural in women's hosiery, so far as possible, and are not so fed up on fancies in any class as in recent years.

Drop in Picot Top Price.

Mechanical features, experience shows, seldom retain their value for any great length of time, so far as contributing to sales. For example, picot top silk stockings, which for some years have been a sort of luxury or extravagance, from the wearer's standpoint, as the embellishment either is hidden or what should hide it is liable to be rated immodest, commands virtually no higher prices than plain top silks of comparable grades. A direct-to-retailer mill, distributing under a nationally advertised brand, in August made its picot top number a $1.65 stocking, reducing the price from $1.85. This was previous to the all-round cut by the Kayser company and was regarded as foreshadowing revisions. At even $1.65, a buyer points out, the picot top is in savage competition with plain top all over silk for $1.50. It seems to have lost its distinctiveness, and is said to be no longer profitable to manufacturers recently installing attachments for forming it. Besides, there is a very clever picot for circular knit hose, and it appears on some right good dollar stockings, a type in which there remains confidence among mills which have been having a harvest with plain back hose for simulation of bare legs.

Dubious Over Seamless Hose.

While some factors appear dubious about women's seamless silk stockings riding along through another season on the prestige which they attained this Summer, there is in some quarters an ingrain confidence that, barring blunders of manufacturers, they will command even more attention than has

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been bestowed upon them. An oldtime manufacturer of the circular knit who seriously contemplated installation of a small full-fashioned plant, said a week or two ago that he believed it would involve so much more risk than keeping his circular equipment modernized that he had given up all notion of experimenting with full-fashioned. His mill, in the South, at the time was busy with orders for plain back fine-gauge 5-thread silk in the seasonal range of colors.

Seamless Holding Up Good.

The comparatively few seamless manufacturers in Philadelphia and those in Reading reported practically no falling off in orders in August, when buyers for September delivery were specifying five and six thread in the popular 300-needle construction. The very sheer, in flesh and suntan tints, were moving less actively, however, and department stores about the middle of the month held their first markdown sales of bareleg hose, disposing of regular dollar numbers for 79 cents a pair and thereabouts.

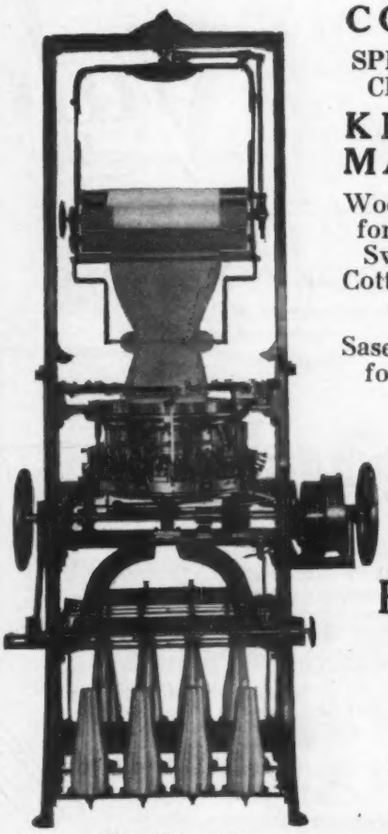
While seamless interests express themselves as doubtful of continued profits for full-fashioned mills, it is the major market opinion, by a very large majority, that within a short time the gap between full-fashioned and seamless in matter of popular use will be as wide as in the most trying days of the circular knit. There seems no doubt that prices for full-fashioned are tending downward and that at levels which may be established before the end of 1929, seamless will be at a more serious disadvantage than during periods of greatest disparity. At this range it appears to observers on the side lines like taking a long chance to exploit seamless silk to sell for $1.75 a pair and more, and lisle for $1.35. A lisle number from a mill in Reading is described as knitted from 180s 2-ply. It is reported having a relatively large sale, production for the time being limited.

Would Knit More Hose to Cut Operating Cost

SEVERAL FULL FASHIONED MANUFACTURERS in Philadelphia and roundabout were inclined to take stock in the view of some larger concerns that, "to get a profit out of current prices it was almost necessary to operate plants day and night, for cutting overhead cost," but closed their mills in August, some for an indefinite period, others for a month. The wage question entered into the decision of one of the manufacturers to make no hose at all rather than operate day and night and make too many. There has been a great deal of reducing production, most Philadelphia mills eliminating Saturday work. One large concern, selling the retail trade under its well known brand, a few weeks ago increased output, restoring Saturday operating, after having reduced cost by 25 cents a dozen and passing the saving to the retailers. In this instance the retailer margin of profit was increased by a slight cut in the wages of mill operatives, leggers receiving seven cents a dozen less and footers taking a reduction of five cents, operatives in other departments participating in the revision for a total of 25 cents. It is pointed out that, with an increase in

COOPER-KNIT

Knitted goods that are full of life and delightfully springy sell easily. These results can be obtained only by using



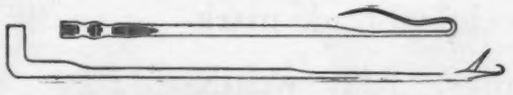
New No. 18-20 Spring Needle Rib Body Machine with Stop Motion

COOPER'S
SPRING NEEDLE CIRCULAR RIB
KNITTING MACHINES

Wool or Worsted for Bathing and Swimming Suits
Cotton, or Wool, for Underwear
Sase, Rayon or Silk for Fine Undergarments

THE MOST BEAUTIFUL FABRIC KNIT ELASTIC AND LONG WEARING

COOPER'S HIGH SPEED LATCH NEEDLES WITH NON-TURNABLE RIVETS



Standards of Accuracy

CHARLES COOPER CO.

Manufacturers of
KNITTING MACHINERY AND SPRING AND LATCH NEEDLES
Bennington, Vermont, U. S. A.

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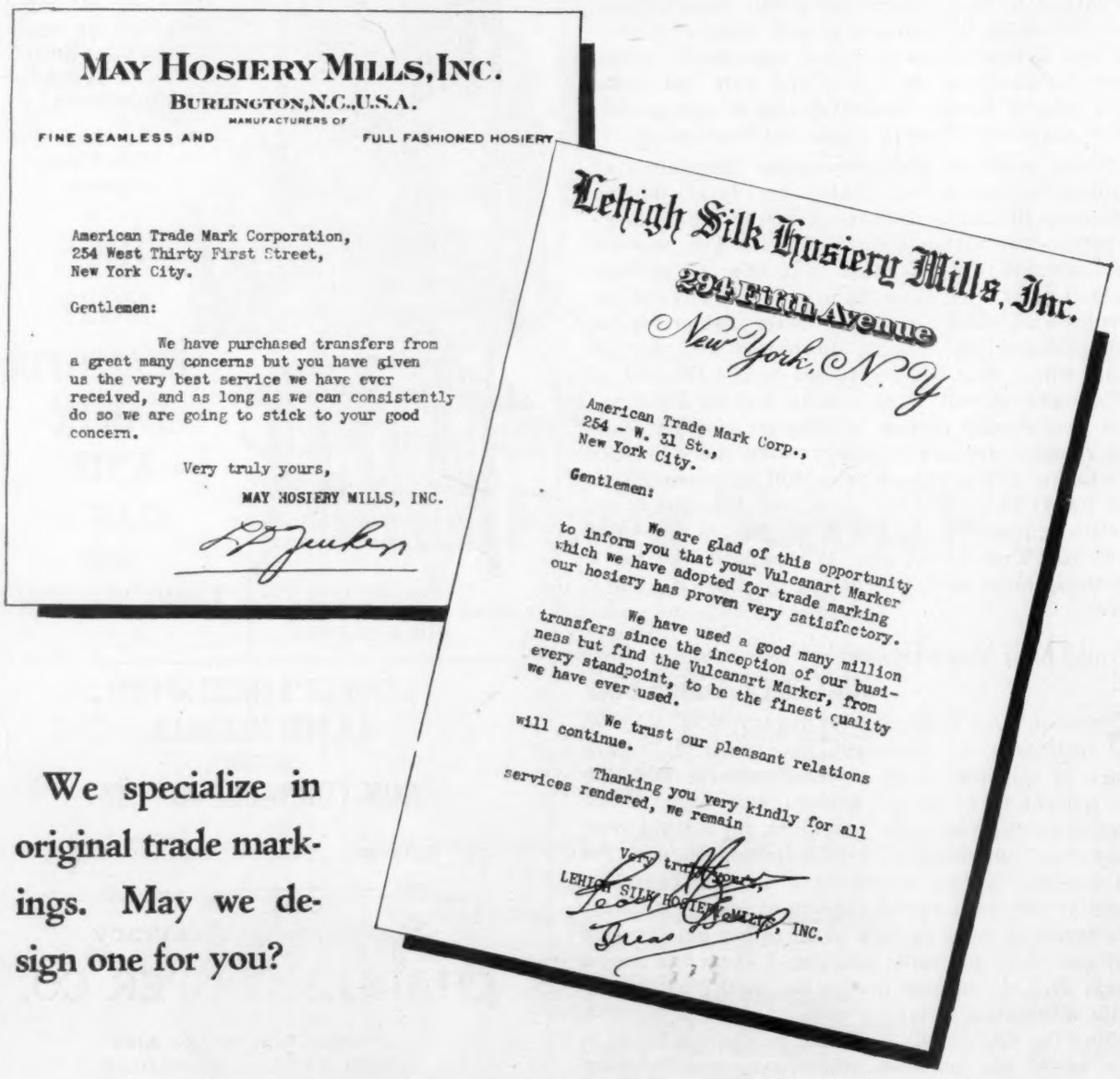
G. W. MORTON, Southern Representative, 1002 Magnolia St., Greensboro, N. C.
ELBROOK, INC., 50 Peking Road, Shanghai, China, Agents for China and Japan.
M. BUCHSBAUM, Calle Alsina 1814, Buenos Aires, Argentina.

Quality + Service =

Vulcanart

THE MODERN MARKING METHOD



MAY HOSIERY MILLS, INC.
BURLINGTON, N.C., U.S.A.
MANUFACTURERS OF
FINE SEAMLESS AND FULL FASHIONED HOSIERY

American Trade Mark Corporation,
254 West Thirty First Street,
New York City.

Gentlemen:

We have purchased transfers from a great many concerns but you have given us the very best service we have ever received, and as long as we can consistently do so we are going to stick to your good concern.

Very truly yours,
MAY HOSIERY MILLS, INC.

Lehigh Silk Hosiery Mills, Inc.
224 Fifth Avenue
New York, N. Y.

American Trade Mark Corp.,
254 - W. 31 St.,
New York City.

Gentlemen:

We are glad of this opportunity to inform you that your Vulcanart Marker which we have adopted for trade marking our hosiery has proven very satisfactory.

We have used a good many million transfers since the inception of our business but find the Vulcanart Marker, from every standpoint, to be the finest quality we have ever used.

We trust our pleasant relations will continue.

Thanking you very kindly for all services rendered, we remain

Very truly yours,
LEHIGH SILK HOSIERY MILLS, INC.

We specialize in original trade markings. May we design one for you?

AMERICAN TRADE MARK CORPORATION

254-256 West 31st Street,
NEW YORK, N. Y.

working time necessitated by an expansion in sales, employes at the lower scale are earning more per week than before the cut.

The Matter of Price Adjustment.

Manufacturers discussing the matter of price adjustment as an inescapable result of excess production, say that "so long as it must be done it might as well be disposed of right away, for ending the agony." Arrayed against this remedy for putting life into the market is the urge of some manufacturers that night work be cut out entirely for a time, as a means for averting reductions, particularly in view of new installation of full-fashioned equipment and the certainty that potential output next year will be greater than in 1929. As is pointed out, with production increasing and sufficient, probably, from single shift or daylight operation of plants to keep the markets supplied, it would be difficult to restore present levels of value, were a sweeping reduction to go into effect.

It is asserted by some who have given close study to existing conditions that there is a surplus of only certain types of hosiery, due to hit or miss mill management and absence of style knowledge, and that this, in conjunction with haphazard merchandising, is the cause for most of the complaint of an unsatisfactory condition as reflected in a disposition to have recourse to one evil for remedying another. With mills struggling for business and an oldtime, seasoned selling agent here and there looking for mill accounts, and not finding them, the situation is an anomalous one.

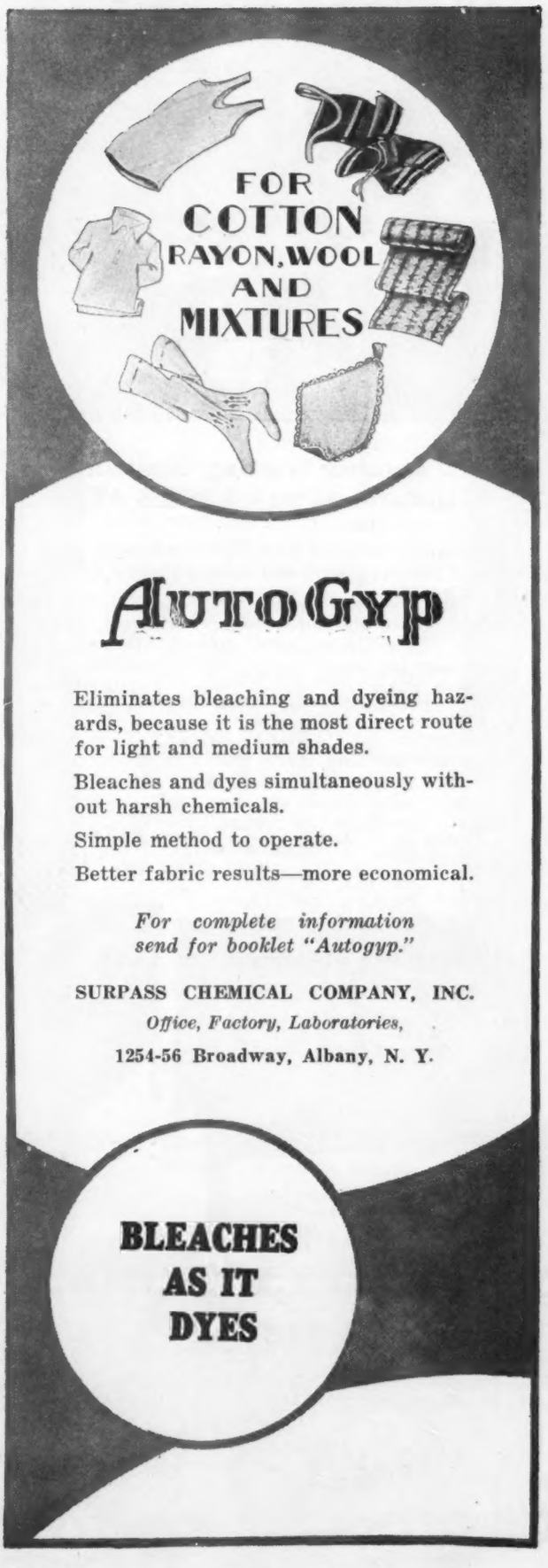
Fancy Half-Hose Business Discontinued by Mill and Mill Agent

DISTRIBUTION OF FANCY HALF-HOSE to jobbers involves so much complication, in the opinion of some interests, that it is a good item to discard. Shreve & Adams, Inc., one of the older hosiery mill agents in New York, states it has discontinued offering fancy half-hose. The company last year sold its controlling interest in the Pilling & Madeley mill in Philadelphia, which since has been operated successfully in the manufacture of novelties for men and misses. "But for the present and for an indefinite time, we are out of the fancy half-hose game," said an executive. The company is, however, offering conservative novelties in anklets and children's hose.

The selling agent for several southern mills also states he also has taken men's novelties out of his line, which now embraces women's full-fashioned and seamless silk. While he volunteered the information of discarding men's fancies, he "wants no publicity about it," he says.

According to a report reaching the trade, the B. Z. B. Knitting Co., Rockford, Ill., is discontinuing the manufacture of fancy hosiery of all classes, and will concentrate on women's full-fashioned, mercerized, and 42- and 45-gauge silk. The company is reported having "cut out all of its fancy numbers in men's and children's lines."

Probably the dissatisfaction with men's fancies can be attributed almost wholly to price competition and the unwillingness of certain jobbers to carry stocks,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RAYON, WOOL
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MIXTURES
AUTO GYP
Eliminates bleaching and dyeing hazards, because it is the most direct route for light and medium shades.
Bleaches and dyes simultaneously without harsh chemicals.
Simple method to operate.
Better fabric results—more economical.
For complete information send for booklet "Autogyp."
SURPASS CHEMICAL COMPANY, INC.
Office, Factory, Laboratories,
1254-56 Broadway, Albany, N. Y.
BLEACHES AS IT DYES

No. 280
Posture Chair

. . . another leading Knitting Mill of the South Standardizes on "ANGLE STEEL" Equipment!

AGAIN "ANGLE STEEL" scores with a splendid installation of posture chairs and knitters' boxes in a High Point mill.

Loopers are here shown using our No. 280 Posture Chair and No. 27-17-16 Knitters' Boxes. All-steel, these boxes are absolutely SMOOTH on every surface. Damaged and wasted materials are impossible with "ANGLE STEEL" Equipment. The posture chair induces increased production at lessened labor costs. Proper seating raises plant morale too.

Standardize on "ANGLE STEEL" Equipment for quickened, more efficient and more profitable production. Time-loss is an unknown factor when our Knitters' Bar Topping Tables, Benches, Boxes, Chairs, Stools, etc., are used.

Write for Catalog "C-C." Over 250 products for plant and office use.

Steel frame is of angle and band construction, firmly riveted. Steel formed feet. Olive green enamel finish, baked on. Seat height adjustable from 17" to 22". Hardwood seat, form-shaped for comfort. Plywood back rest, form fitting and adjustable to any figure. Seat and back rest finished oak or mahogany. Solid construction prevents distortion, wobbliness or loose joints. Seat adjusts backward and forward.

No. 27-17-16 Knitt rs'
Steel Boxes

No. 27-17-16 KNITTERS' STEEL BOXES

Size: 27 in. long x 17 in. wide x 16 in. deep, inside measure of box proper. Box part of 20-gauge, high-grade, extra-smooth black sheet-steel. Overall height, ingluding legs, 22 in. Top edges of box are rolled and all corners hemmed so that absolutely no sharp edges or seams are in the box or at the top. Also, special care is given to outside of box for smoothness so that silk or other knit goods will not be ruined. Spot- and acetylene-welded construction. Finished throughout in durable, rich olive-green lacquer.

Angle Steel Equipment

OF STEEL

ECONOMICAL - SANITARY - DURABLE

ANGLE STEEL STOOL CO., Plainwell, Mich.
☐ Send Factory Representative.
☐ Mail Catalog "C-C."

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Company _____
Address _____
City _____ State _____

while requiring that mills always have new patterns ready for delivery, as otherwise retailers draw their supplies from manufacturers selling direct. The markets are flooded with novelty half-hose at almost any prices merchants are willing to pay, is the allegation of a southern mill executive. Not only are profits practically eliminated for the manufacturer who insists upon keeping his plant in operation, styles change so frequently that it is too costly to try to keep abreast of innovations and all the burden of doing so must be borne by mills, as jobbers take in only "drug store" quantities and "go up in the air" if a manufacturer does not have the latest designs ready to ship.

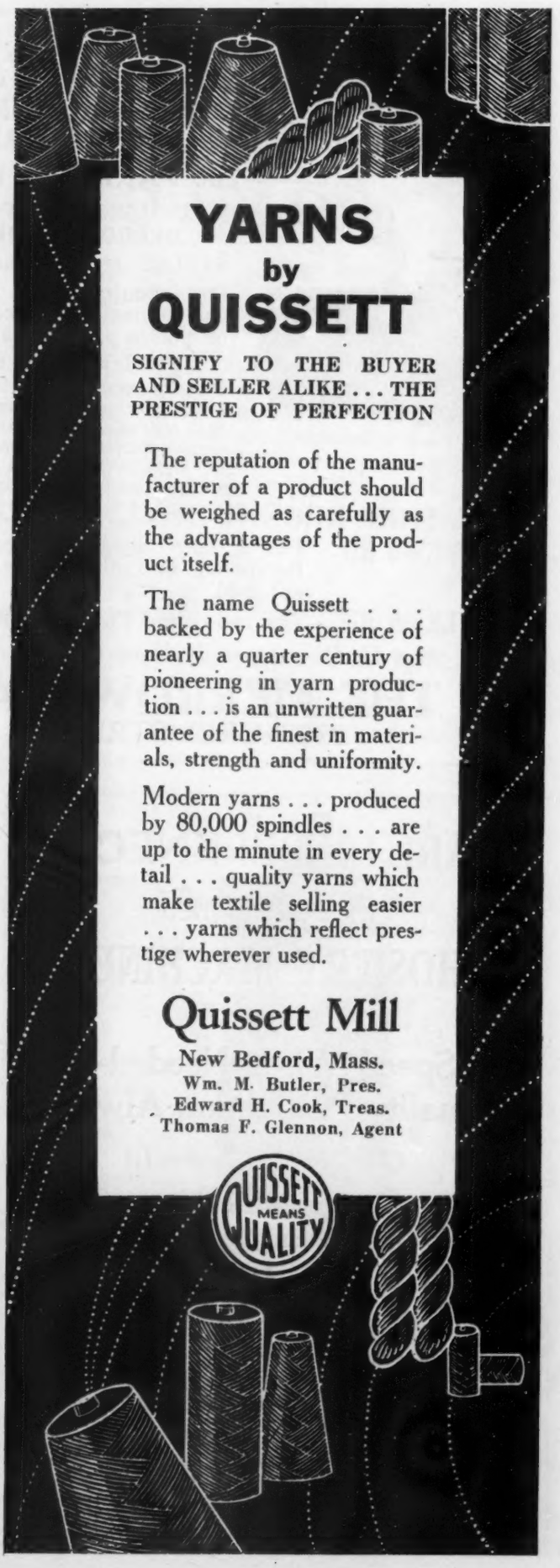
"Just another turn of the screw that is squeezing the jobber out as a distributor of hosiery," is the comment of one who admits his establishment is in its decadence in this respect and has been for several years. Infants' socks were taken out of the lines of quite a few jobbers in very recent years, and the number of wholesalers that are offering women's silk hosiery is increasingly less. One of the larger jobbing houses in the East, it is stated by the hosiery department manager, has just sacrificed a quantity of choice items in full-fashioned novelty half-hose. They were designed for the dollar bracket, but now are passing over the counter for 75 cents, and reported not in lively movement at that. Unlike the 50-cent and 25-cent socks, the dollar goods are immune from price competition.

An upstate Pennsylvania mill is operating day and night on 25-cent fancy socks for men. It has an advantage in low operating cost and is not adversely affected by offerings from mills in North Carolina, which are recognized as largely monopolizing the market for popular price fancies. The cost of knitting multi-color hose has been brought to a level where hosiery printers are barely able to make the prices for printing even low end lines competitive. An establishment which has thrived on printing hosiery and certain fabrics is sounding the trade on the prospect for black heels for women, having had considerable business from that source when they were popular several years ago. Some of the shops say there is an occasional inquiry for black on gun metal, but not enough to give manufacturers an incentive to attempt to revive the one time fad.

A Glimpse at Anklets for the Ensuing Season

ALTHOUGH SHREVE & ADAMS, INC., have decided no longer to handle men's fancy half-hose, the company is strongly featuring novelty anklets for women and children, using a line from the Schuylkill Hosiery Mill, in Reading, which, by the way, has added a factory for making attachments for circular machines with which to produce pattern hosiery, in the Schuylkill mill exclusively. Its latest achievement in this respect is a line of anklets with ornamental yet decidedly chaste cuff tops, and otherwise plain. The mill also has exclusive patterns in children's five-eighths length hose, an item which some factors figure is liable to be displaced, in some extent, by anklets.

Orders for infants' hose for the next season call for probably 60 per cent of anklets, it is estimated by


YARNS
by
QUISSETT
SIGNIFY TO THE BUYER AND SELLER ALIKE . . . THE PRESTIGE OF PERFECTION
The reputation of the manufacturer of a product should be weighed as carefully as the advantages of the product itself.
The name Quissett . . . backed by the experience of nearly a quarter century of pioneering in yarn production . . . is an unwritten guarantee of the finest in materials, strength and uniformity.
Modern yarns . . . produced by 80,000 spindles . . . are up to the minute in every detail . . . quality yarns which make textile selling easier . . . yarns which reflect prestige wherever used.
Quissett Mill
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QUISSETT MEANS QUALITY

MERROW

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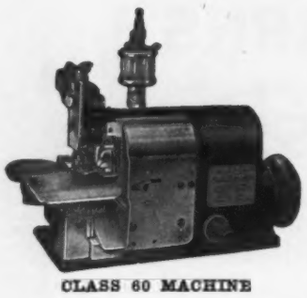
HIGH SPEED TRIMMING AND OVERSEAMING, OVEREDGING AND SHELL STITCH MACHINES FOR USE ON KNITTED AND WOVEN FABRICS OF ALL KINDS

———200 VARIETIES FOR 200 PURPOSES———



CLASS 60 MACHINE

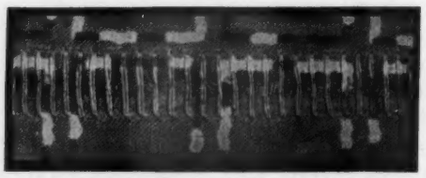
INQUIRE ABOUT NEW MERROW MACHINES

STYLES 60-ABB and 60-D3B

For simultaneously trimming and joining ends of cotton, silk or woolen piece goods with a

FLAT BUTTED SEAM

Permits goods to pass through finishing machires, uninterrupted, for such operations as Shearing, Calendering, Mercerizing, Bleaching, Dyeing and Printing—with *remarkable saving*—both in labor and fabric.



Butted Seam, natural size, made by STYLE 60 ABB MACHINE on Cotton Goods which have been subsequently processed. The STYLE 60 D3B makes a similar though much wider seam designed for use on sleazy or loosely woven goods to insure holding.

OTHER RECENT DEVELOPMENTS—FOR THE RAYON TRADE

STYLE 60 RD —For a three-thread overedge finish, either straight or scalloped, on Rayon Bedspreads and other sleazy articles on which the ordinary edge finish will not hold.

STYLE 60 JDC —For two-thread FLAT SEAMING on Rayon Underwear.

Let Us Demonstrate the Work of These and Other Machines on Your Own Fabric.

THE MERROW MACHINE COMPANY

16 LAUREL STREET, HARTFORD, CONN.

KARL LIEBERKNECHT

Full Fashioned

HOSIERY MACHINES

Are Known for

Speed When Needed—
Quality Production Always

(The Machines Confirm It)

Manufactured by

KARL LIEBERKNECHT, Oberlungwitz, Saxony

(In Any Desirable Gauge and Number of Sections)

Imported and sold exclusively by

LOUIS HIRSCH TEXTILE MACHINES, Inc.

47 W. 34th St., New York, N. Y.

Lieberknecht Hosiery Machines have been made by KARL LIEBERKNECHT, Oberlungwitz, Saxony, continuously since 1873

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Do You Know the Importance of *Correct Processing* of Rayon Yarns?

THE sale of finished products depends on quality, style and workmanship. *Correct processing* will show the value of good yarns. Correctly processed yarns will aid in the manufacture of products by minimizing the troubles attendant with knitting or weaving rayon yarns.

Consistent uniformity and high quality processed rayon yarns is your assurance of better finished products.

Our four large plants combined with a scientific knowledge gained through long experience allows us to offer *the right yarn for the right use.*

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***The* Yarns Corporation *of* America**

290 Fourth Ave., New York, N. Y.

Processors of Crown Brand Rayon Yarns

THEODORE LIEBERKNECHT 45-gauge machines are to be installed in the Brumbach & Miller hosiery mill, the building for which is approaching construction, at Temple, near Reading. The initial unit will consist of ten machines. John E. Phipps, New York, is to sell the production. The parties forming the new organization are manufacturers of woolens and worsteds, near Reading, operating two small plants.

selling agents. The business in the aggregate placed to the latter part of August represented only a small part of jobbers' prospective requirements for Spring. Buyers were prompt after the opening to give the lines of most mills a lookover, and were lavish with promises to operate. While but a fraction of the promises have been translated into orders, the season starts off with every prospect of exceeding that recently ended, in matter of volume shipments.

Buyers appear to believe that manufacturers name higher prices for the sock openings than they expect to receive. On this theory their first orders usually are given orally and do not include details. From then on it is a question of patience, that of sellers usually wearing out before buyers begin to feel concerned about samples. Then recession from prices which buyers suspect sellers did not expect to get, and buying starts. The price line developed curves and angles again this year, quotations on comparable lines, at times varying by as much as 25 cents a dozen, and more in some instances, it is stated by several mill agents. This was rather surprising, as a majority of the sock manufacturers had held star chamber sessions at which, it was understood, there was a coming together that it was believed removed the danger of anyone among them kicking over the traces.

The leaders among the mills have taken some business and have orders in process. These have been running steadily at capacity since Spring, when there was a flood of repeat orders, some of which had to be turned back. The fiscal year closed as one of the best since the post war period of upset markets, and the next promises equally satisfactory.

A recent dumping of women's seamless anklets has raised in the minds of some factors the question whether any of the manufacturers is doubtful of their continued popularity. Early in the month a lot of silk-rayon, formerly selling for $4 a dozen were let go for $1.75, and another lot, from the same mill, described as mercerized, with fancy tops, are sold for $1.25 a dozen, which was 90 cents below the price for which they were held regularly. Subsequently, seamless silk anklets, bearing the maker's brand, were closed out at $4.50 a dozen, a drop of $3 from the price formerly paid by retailers. The three lots were said to represent discontinued numbers, a term under which considerable underpriced hosiery seems to be going into distribution. The explanation is, probably, that anklets for the next season are promised in improved form by several manufacturers. They are to be so knit that they will fit the lower ankle more snugly and overcome the tendency of the cuff top to fall over the shoe top.

Light weight wool anklets for women are reported being taken at a fairly good rate for fall. The roll

BONE-DRY UNSHRINKABLE WELL-FINISHED

HARD MAPLE HOSIERY BOARDS

THAT ABSOLUTELY SMOOTH WORK

Give you that much desired finish that cannot be obtained from any other than wooden boards.

You get the length, lustre, *feel* that the goods should have.

Our special finish is highly recommended for silk and chiffon hosiery.

We serve the best mills—send a request for list and same will be forthcoming.

BONE-DRY HOSIERY FINISHING BOARDS

JOSEPH T. PEARSON & SON CO.

Manufacturers

Kensington and E. Boston Avenues

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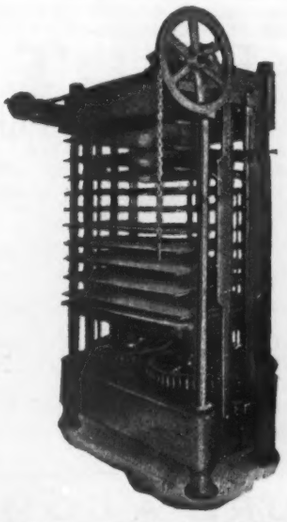

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Hot Plate Screw Press

FOR

Hosiery and Underwear

Write for Catalog and Prices

Reliance Machine Works

FRANKFORD, PHILA.

Stripper X

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Because there is no substitute for quality.

A constantly increasing number of dyehouses and finishing plants are insuring the uniform quality of their products, better production and more firsts by using rthocen

Ask your neighboring mill what they think of Orthocen.

American Aniline & Extract Company, Inc.

SINCE 1898

Dyestuffs of Quality

141 North Front Street, Philadelphia

Sole Manufacturers of rthocen

Chemicals of Originality

FELT

For all Mechanical Purposes

Slashers and Roller Cloth for Cotton Mills.
Felt wicks and washers
FULL FASHION HOSIERY MILLS
Felt Sets for TEMCO Electric Heaters
Complete stock for immediate delivery

Samples and Prices Upon Request.

FIDELITY FELT COMPANY

Pike St. & Rising Sun Ave., Phila., Pa.

S. L. DIGGLE MANAGER — ACME SALES CO. — CHARLOTTE N. CAROLINA

SINGLE or PLY

Natural---Gassed---Dyed---Bleached

MERCERIZED YARNS

All Counts and Descriptions for the Knitting, Weaving and Converting Trade

DIXIE MERCERIZED YARNS

SECURE A COMPLETE EXAMINATION

with our

EXPANDING INSPECTING MACHINES

LEARN TO HATE DYED MENDERS

For Seamless and Full Fashioned Hosiery.

Edward R. Ammon, Reading, Pa.

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Works: 2046-48 Amber Street
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MANUFACTURERS OF

Cotton Mercerized Tapes, Spool Tapes, Bindings and Narrow Fabrics for Underwear and other Trades.

top is of brushed wool, as a part of the sports scheme. They are designed to retail for a dollar a pair, and expected to displace spattees in inclement weather, combining utility with sports dress.

Underwear Primary Markets Await Coming of Buyers

WITH BUYING of light weights barely started and jobbers waiting for a second slant on prices, and heavies in the expected slow movement following the government cotton crop estimate and condition, the underwear primary markets have been minus animation. Light weights for 1930 were opened some days before the cotton figures came out, at prices which represented practically a repetition of those of last year, and no complaint on that score was heard from buyers or in the ranks of competing mills. It so happened that a number of the leading buyers were on vacation, the opening therefore being too prosy a formality for the comparatively few who were out to hear prices and look at samples.

Interest in light weights seemed to lag during the greater part of the month, and only in a general way could it be said that offerings were accorded a wholesome reception.

Light weight ribs and bal briggans are receiving more than usual attention, making it appear to some observers that both are being seriously considered for the 1930 season. Athletic shirts and shorts have had a season's phenomenal run, and it would not surprise some interests if union suits stage a comeback. Although the shorts took the younger element by storm, statements by manufacturers concerning jobber inquiry would appear to indicate a tendency to drawers and union suits that end below the knee, for the better protection of trousers against perspiration.

Notwithstanding the lines of most manufacturers were on the market by the second week in August, it is an admission among sellers that buyers hardly could be expected, in the great variety of style, to come to a conclusion before September as to how best to line up their stocks, and that therefore nothing in time or sales would have been lost had the opening been deferred until the week following Labor Day. By that time, it is pointed out, the vacation season will be in the background, the "tired feeling" that is an accompaniment of sultry Summer days will have disappeared, and buyers will be in the market in numbers for heavy weight underwear and winter knit goods generally.

The heavy weight orders thus far placed leave the impression among mill men that jobbers are not well taken care of for early Fall delivery requirements. Notwithstanding the mild jolt to the cotton goods trades with the reported larger bale crop at a time when all textile commodity markets were in their dullest period of the year, underwear prices seem not to have been disturbed. There was not that raid for recessions which some mill men feared might be attempted.

Chain stores and syndicate buyers are understood to have placed some substantial business in men's light weights and women's cotton underwear, while comparatively few jobbers are said to have placed

SINGLE YARNS
MERCERIZED
Licensed Manufacturer
TINTED YARNS
Bleached, Dyed,
Mercerized
and Glazed
Sewing Thread
Selling Agents
JOHNSTON MILLS COMPANY
New York: 93 Worth St. Philadelphia: Public Ledger Bldg.
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Burke County Trust Bldg. 166 W. Jackson Blvd.
CANADIAN REPRESENTATIVE
Slaters, Ltd., 53 Yonge St., Toronto, 2, Canada
THE ELMORE COMPANY
MERCERIZED
YARNS
Spindale
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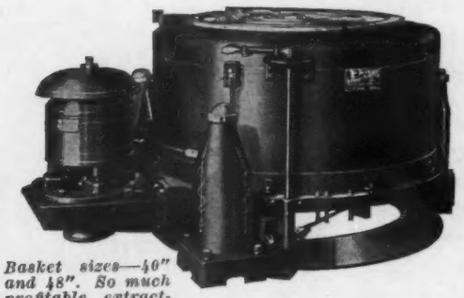
When you get acquainted with O-T Extracting



Basket sizes—40" and 48". So much profitable extracting in so little space.

When you chalk off the O-T's modest floor dimensions—when you check O-T production against O-T square inches—when you look at that low-set, accessible basket, *silk-finished*, with *monel metal* side sheets . . . then you will understand why the big-capacity O-T is standard equipment in so many leading textile mills! Write for the O-T facts.

THE AMERICAN LAUNDRY MACHINERY CO.
Specialty Department C
Norwood Station, Cincinnati, Ohio

The Canadian Laundry Machinery Co., Ltd.
47-93 Sterling Road, Toronto 3, Ont., Canada

more than sample orders. Catalog houses also have felt out some of the mills, with conservative initial orders. As to heavies, syndicates and chains are believed to be better protected with stocks than the average jobber or single unit retailer. There is, therefore, reason for expecting a fair measure of activity in both heavies and lightweights.

Standard rayon underwear for women and girls has been unusually quiet since stores provided for their Summer needs. Jobbers and retailers say it is more apparent than ever that cheapened garments for a price are working to the serious disadvantage of the character of goods calculated to compete sharply with silk. One line was being offered to retailers a few weeks ago at $4 a dozen for each of bloomers, pantees and combinations, subject to return if not sold in 60 days, to be replaced with new styles.

It is observed that leading Pennsylvania manufacturers of both rayon and cotton underwear for women are guarding their trade in cottons as zealously as that which makes rayon the bread-and-butter line. Some very fine gauge cotton bloomers and vests are on the way in medium weights, and manufacturers state demand has suffered no decline from last season.

Sweaters Show More Activity; Bathing Suit Buyers Waiting

BELATED REPEAT ORDERS for sweaters are reaching manufacturers, after a lull during which it was deemed expedient to shut down some plants. Houses which had bought fairly liberally of women's light weight worsteds, in expectation they would be extensively worn, as had been indicated by fashion forecasters, were especially tardy with their Fall orders. By the time it became apparent that bare arms would be a summer vogue, mills had pretty well completed deliveries of Summer sweaters. They are probably as good an asset as when ordered, as the trend is to lighter knitted fabric and there seems assurance that sweaters will figure as customarily in the wardrobe selected for winter. Carryover Summer sweaters and a steady decline in yarn prices gave to the knit sweater trades a setback that could not have been foreseen, but from which it is fast recovering.

Retailers in sections remote from Philadelphia have placed fair size orders for sweaters, dealers in southern cities being among the first to detail. Jobbers who have had responses from retailers say the outlook is for a no less volume of sales than last year. If this holds good, there will have to be a speeding up by mills, as very few have been manufacturing for stock and jobbers have not covered for 50 per cent of the amount of their 1928 Fall and Winter business.

Shaker knit sweaters have thus far been disappointing to most manufacturers. Several shaker plants which operated to capacity during the Summer of 1928 have been idle for six to eight weeks, and reports indicate that only two of the Philadelphia mills are well engaged on sweaters. Sports coats are again in strong favor, choice being divided as between pullovers and buttonups, with buyers laying stress on the sleeveless.

Bathing suits in the first month of the opening have attracted buyers, but manufacturers say that when it comes to signing an order, buyers are inclined to spar for time. Fancies in daring outline, for both sexes, are reported receiving most attention, but according to conservative buyers, the sunbacks designed for 1930 would expose a trifle too much of the bather's anatomy. Sunbacks on the modified order are promising of wide popularity, which is equivalent to saying that straps over the shoulders and about midway between the armpits and hips will be retained as a means for holding the backs and fronts of the garments in place.

It may be pointed out as a peculiarity of knitted wear that bare arms hurt the sale of Summer sweaters and bare legs caused a scare among merchants that adversely affected the sale of silk stockings, while bare arms, legs and backs are making for the biggest business ever written for bathing suits.

STRATFORD KNITTING MILLS, Philadelphia, manufacturers of women's rayon and cotton underwear, a few weeks ago commenced operations in a branch factory at Linfield, in the Schuylkill Valley section of Pennsylvania. E. W. Annable, who recently sold his Annabelle Underwear Co. plant, to acquire an interest in the Stratford, has been elected its president and general manager.

BEGINNING as a boy of all work in a hosiery mill, F. Elwood Struve has become general manager of the Apex Hosiery Co., women's full-fashioned silk. He began his career in the employ of the company of which he has become general manager, and after becoming an expert fixer and later a knitter, he was made superintendent, in which capacity he took a leading part in forming the present working organization by which the mill became a strictly non-union shop.

Bulletin Regarding Durene, Etc.

The Division of Merchandising of the Associated Knit Underwear Manufacturers of America has issued Bulletin No. 4 under the title, "Durene and French Spun Worsted for Men's Fall Knit Underwear Models." This bulletin is being distributed to buyers of underwear in the leading style stores of the United States, as well as to others in the textile trade who may be interested.

Mention is made in the Bulletin of the national consumer advertising campaign that will start in October and will feature the merits of "Durene." Retailers are advised to stock the models recommended so as to receive the full benefit of the sales reaction that will result from the advertising.

The illustrations show the styles that will be featured in the Durene advertising as follows: Knitted athletic shirt and shorts; knitted athletic shirt and longs with elastic waistband; polo type knitted shirt with short loose sleeves and longs with a patterned waistband and leg cuffs to harmonize with the color tone of the garment; shoulder-button semiletic style union suit. These garments are in both white and pastel shades. The Bulletin also calls attention to the men's style undergarments for Fall made from fine French spun worsted yarns in white and random pastel tones. The garments are sponsored in two styles —knit-athletic union suits and semiletic union suits (no sleeves and three- quarter length legs.)